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REPORT OF THE COMMITTEE ON TUBERCULOSIS.

At the Columbus meeting of the American Medical Association, June 6-9, 1899, the following resolutions were adopted:

Resolved, That the president appoint a committee of five with power to add to that number, who shall prepare a report on the nature of tuberculosis; its communicability and prevention; the more effectual means of controlling the spread of infection and of educating the people in personal hygiene, so as to lessen the chances of their becoming tuberculous and to increase the prospects of their recovery; the advisability of establishing national and state sanitoria, and such other matters as may be pertinent to the subject.

Resolved, That this committee shall present this report to the Congress of the United States and to the legislatures of the various states of the Union and urge upon them that appropriate measures be speedily taken.

To the President and Members of the American Medical Association:

GENTLEMEN:—Your Committee on Tuberculosis appointed in pursuance of a resolution of the meeting of 1899, was instructed to report on the general subject of tuberculosis, as to: 1, its nature; 2, its communicability; 3, its prevention; 4, the control of the spread of the disease and the education of the people so as to lessen their chances of infection and their prospect of recovery when infected; and 5, on the advisability of national and state sanatoria.

In presenting this preliminary report your committee finds it unnecessary to deal at any great length with the first two sections of the subject assigned.

1. Tuberculosis is a disease of many tissues of the body, due to the growth therein of the tubercle bacillus, which finds for some reason a favoring culture field in the organs. Granular minute bodies, known as tubercles, are produced, whose tendency is to necrosis and the setting up of the process of suppuration. Poisoning of the system in varying degrees results from both of these processes, and important organs and functions are interfered with and so death follows in a large proportion of cases.

The exact mortality of tuberculosis can not be stated, for all the cases can not be counted, since many are undiagnosed and many are suppressed; but in this country it probably amounts, in towns, to not far from 14 per cent. of all deaths, and it is easily demonstrated that the pulmonary form reaches 9 to 11 per cent. of all deaths. In the country, as a whole, the mortality from all forms of tuberculosis is probably considerably below 14 per cent.; possibly not over 12 per cent. In upward of forty towns and cities of the United States, which for the year 1897 reported their deaths from consumption, the mortality from this disease was 10.9 per cent. of the total mortality. Tuberculosis kills thirty times as many as die from smallpox and scarlet fever together, and four and a half times as many as from these two diseases with typhoid fever and diphtheria combined. The figures thus show that this is the most destructive disease extant. It is, moreover, the one least subject to fluctuation; the most constant from year to year. Domestic animals furnishing the food of man are afflicted with it, and bacilli are found in the milk and butter derived from them. It is intertransmissible with them.

It is difficult to state the morbidity of human tuberculosis. Pathologists give varying figures as based on post-mortem examinations, of 40 to 75 per cent. of all people as being afflicted with it in some portion of their bodies some time in their lives. Probably a fairer figure would be 50 per cent.

2. Tuberculosis is a communicable disease: is carried from person to person as a specific bacterium which enters the body and thrives variously or dies, depending on the personal susceptibility of the individual. This varies in different bodies and in the same body from time to time, and is increased by ill-health, unhygienic conditions of life, starvation and overwork, and by hereditary predisposition. It is decreased by bodily vigor, outdoor life, good hygiene and perfect physiological functions.

Tubercle bacilli are very prevalent in the atmosphere of cities and towns, and not all people who imbibe them take tuberculosis, but only those with a power of resistance that is too low either to destroy them or to render them innocuous.

The bacilli are acquired mainly through the air, which carries them directly into the mouth, nasal passages, throat, trachea and lungs. Bacilli taken into the mouth and throat are mostly swallowed, and, if not destroyed by the acids of the stomach, pass into the intestines, sometimes to set up tuberculosis there. The microbes are doubtless often swallowed in milk, and are carried to the mouth by polluted utensils, by things chewed, and possibly by the kiss of infected persons. Some bacilli find their way into the lymphatics and blood-vessels, and so are disseminated through the system, possibly to start foci of disease in distant parts of the body.

3. As to prevention a larger word is to be said. Complete suppression of the disease is too much to hope for, but it is possible to limit to some degree the spread of it, and the necessary measures should engage the most earnest and sustained attention, and have the insistent support of every member of the medical profession. The first step to the accomplishment of this end is to reduce the number of tubercle bacilli in the air we breathe. The disease is largely air-borne, and our duty is obvious. The following are practical measures: *a.* Destruction as far as possible of all tuberculous sputum, either by fire or by chemical agents in spit receptacles. *b.* Careful disinfection of contaminated clothing, utensils and rooms—clothing and utensils by heat, either dry or moist, and rooms by formalin. *c.* Careful management of the patient in his person, and especially as to his expectoration. *d.* The segregation of infected persons, in whom the disease is active, under the care of nurses competent to prevent them from contaminating the atmosphere.

The next step is to protect food-stuffs, especially milk and meat, from contamination. This necessitates the careful and constant inspection of dairy herds, the creation and enforcement of wholesome rules of management, and the destruction of all seriously sick cattle.

Then the people, especially those known to be predisposed to the disease, need to be kept constantly in a condition of robust, not to say athletic, vigor. Any drop from this stand-

ard is dangerous. Comparative freedom from contact with the bacilli is the greatest desideratum; it is only less important, as people can never be wholly free from them, that they should have the greatest power to resist their multiplication in the body. The largest influences to this end are a life much in the open air and perpetual freedom from every excess in any possible direction.

4. How can the people be educated to prevent the spread of tuberculosis, and when infected how can they have larger hope of recovery?

The lessons on this point should be as few as possible, so as to avoid confusion and the scattering of public attention. They should be consistent, and contain nothing unnecessary. A few cardinal doctrines ground into public thought will be more effective than a hundred casual details. They should carefully avoid unproved theories and impracticable measures; nothing blights a good reform movement so surely as these. They should be such, and only such, as will command the unanimous approval of the profession, so that there shall be no confusion of tongues or advice. They should be limited, in the burdens they impose on the public, to such measures as will appeal to its common sense, and not provoke antagonisms or unnecessary hardships. These are cardinal truths: *a*. We must enlighten the people as to the nature of tuberculosis and the method of its distribution. *b*. The urgent sick should, if convenient, be segregated somewhat from the well, and be sent to sanatoria if possible. If they live with their families they should know and obey the rules of proper personal care and conduct. The practice of keeping consumptives ignorant of the nature of their disease, when they are expectorating billions of bacilli every day, is a crime against the community. They are usually less shocked by the truth than their friends are, and knowing it, they are more ready to join in measures for their own good and for the protection of others. *c*. All spitting on floors, sidewalks and public conveyances must be discouraged and forbidden by law. Expectoration should be received into articles that can be burned or disinfected, and its destruction should be insisted upon. Long exposure to sunshine kills the bacilli, but when infected sputum is cast out upon the ground the possibility is great—except in regions of the most intense sunshine—that before it is rendered harmless it will become to some degree part of the dust of the air, to the danger of the community. *d*. The tuberculous must not wear long beards, nor allow their mouths to carry infection to others; and contaminated clothes should be frequently sterilized by heat. At least in the houses of expectorating tuberculous patients, carpets are an abomination, and the sweeping of rugs even should be forbidden. *e*. The truth should be inculcated that only the most scrupulously careful patients of those who expectorate much can avoid contaminating their clothes and articles about them, and that, therefore, the watchfulness should be perpetual. *f*. It requires most exceptional nursing of a consumptive who expectorates much, to prevent contamination of his room. Therefore it ought to become public policy that health officers should, in their discretion, as a general rule, when they receive reports of death from pulmonary tuberculosis, require that the rooms in which the patients died shall be immediately disinfected. The only exceptions should be where the proof is positive that perfect cleanliness has been maintained throughout the sickness. *g*. The people ought to be instructed that when one is seized with tuberculosis—especially that form which leads to consumption—there should be immediately adopted a radical plan of management of the case, to include, as far as possible: a reduction in labor and care; a change in surroundings and conditions of life; a life either quite out-of-doors, or, if in-doors, with as much fresh, pure air as possible; the greatest amount of rest and sleep; the best nourishment suited to delicate digestion, and taken oftener than is usual in health; and a sharp reduction in exercise if fever is present. Conservative medical treatment, to be prescribed by the physician, is useful but secondary. The foremost purpose must be to increase the resisting power of the body to the disease. Thus only does recovery come, and the greatest single measure to this end is probably the out-door life. Consumptives should become out-door instead of in-door animals. The chief advantage of good climates for the disease is in the possibility of the patient's living out of doors, although dryness of air is valuable and altitude has benefit for many cases. *h*. Nothing will be gained in this day and generation by attempting to secure by law the reporting to health officers of all cases of tuberculosis. Many physicians will never report their cases frankly; they will hide them, treat them under inaccurate and unscientific diagnoses, conveniently forget and even prevaricate, and their patients will sustain them. Such laws already enacted are dead. It has been and will be found impossible to execute such a rule, as to any disease that is never epidemic, but invades the bodies of half the people, many of whom go about in apparent health for years, and forget that they are seriously sick. And even if the health departments had the reports they could not serve any useful purpose except for statistical generalization; a purpose that is frustrated by the comparative worthlessness of all such records. *i*. All tuberculous farm stock, especially all animals whose bodies or products become food, if manifestly sick must be destroyed, and at public expense if not otherwise. But many mildly tuberculous cattle, like men, recover when given a better physiological chance; and recent events have shown that legalized attempts to destroy, to the burden of the community, large numbers of domestic animals that have all the appearances of health, sometimes meets with such opposition as to frustrate the whole beneficent scheme. We ought to have known and expected this, and it is pertinent to ask if it is important that meat shall be always free from a final few tubercle bacilli, that are killed by cooking, when fed to people a large percentage of whom have live bacilli in their own bodies. It would be better to try to educate the people to pasteurize their milk and always cook their meat, and to adopt a temperate destructive policy as to cattle, and a strenuous policy of care and segregation of slightly tuberculous stock, rather than, with measures that are open to the fair charge of being too radical and sweeping, to arouse a reaction that shall every few years sweep from the statutes of a state all the really necessary laws of this kind.

5. The sanatorium idea is increasing in this country. It is becoming popular as it has grown in popularity abroad, and it offers the greatest hope for tuberculous patients. The people are beginning to discover the value of regular sanatorium management for the cure of this disease. The cure depends vastly on an increase of the specific resisting power of the patient, and this can be accomplished best by hygienic measures carried out faithfully without a break for many months at a time. Fresh air, out-door life and a regimen of rest, diet, exercise and sleep which tend to increase the physiological forces that destroy or repress the bacilli, are the most important measures. Patients *may* carry out these measures by themselves, under advice and with a special nurse for each case, but usually they do not, but blunder at least one day in the month, by some excess or omission, and so neutralize all their previous gain. The sanatorium properly managed offers the best means up to this hour, for the cure of the average case.

The world was slow to learn that the sick with acute diseases deserve to be nursed by expert hands; that the trained nurse, moved by professional ambition and pride of success, makes for comfort and recovery to a patient, better than the casual care of unskilled strangers, or the agitated excess of inefficient friends. We are only just learning that people in the slow clutch of the most mortal of all maladies deserve a similar expert skill in their care, and to have it continued without interruption through the months and years if need be. The victim of a familiar, creeping death that is avoidable, is as much entitled to consideration as if he had the swift plague. Our virtue is apt to be spasmodic; we rouse ourselves for the relief of imminent disaster. It is a soberer and wiser virtue that creates and sustains measures to repress an insidious calamity.

Sanatoria for consumptives should be established all over the country. They are springing up with encouraging rapidity, but nearly all of them, so far, are for the people able to

pay. The majority of patients are unable to pay for institution care or for change of climate, and they are as deserving as any. To these the state owes a debt that is as genuine and urgent as any it owes to its other unfortunate citizens, and the state should erect and maintain sanatoria for them. Moreover, by saving the lives of a portion of these patients, and circumscribing the spread of tuberculosis, the state will always in the end be the gainer in wealth. We hold that it is the duty of The American Medical Association, not merely by the mouth of a committee on tuberculosis, but by its general membership as well, to urge on the legislative bodies of the states and the nation the surpassing necessity of these measures.

6. There has been much discussion during the past year over a proposition to exclude by quarantine regulations, consumptives from two states of the union that have been resorts for such patients. We are not aware that the suggestion has even been seriously considered by any medical body, or by the profession at large. But it is true that there has grown up among some of the citizens of those states an impression that all of the recent increase of tuberculosis originating within their borders is directly chargeable to the numerous cases that have migrated to them. This is probably in part true. But these regions have more and more vivid sunshine than other parts of the country, so that bacilli that are out of doors are more likely to be killed. The contamination of the localities, if it has occurred, is most probably from infection of habitations through ignorance and carelessness; and this is an argument for the institutional care of as many cases of tuberculosis as possible, and for disinfection of certain houses, as we have recommended.

Whatever else the states referred to, or other resorts for consumption may or ought to do for their own protection, we are convinced that it will be impossible to do it by general exclusion. Not 10 per cent. of the cases journeying thither could be excluded by the most rigid quarantine, and any effort to do this effectively would arouse intense popular opposition, as the mere discussion of the subject has done already. At the same time it would tend inevitably to divert attention from the proper care of the cases from day to day, as the only feasible means of protection for the public.

Norman Bridge,
W. A. Evans,
Paul Paquin,
Committee.

RESOLUTIONS ON TUBERCULOSIS ADOPTED BY THE SECTION ON HYGIENE AND SANITARY SCIENCE.

Whereas, There is large demand for official statement relative to some of the questions pertaining to tuberculosis; therefore we

Resolve, That, 1. It is best that the policy of medical societies, medical officers and medical men be one of education;

2. Steps for the suppression of tuberculosis in this country must be so gradual that organized opposition shall not be engendered;

3. It is the duty of every national, state and municipal government to distribute tracts, arrange for lectures, and in every feasible way educate the people along the following lines: *a*, tuberculosis is contagious; *b*, it is preventable; *c*, it is curable; *d*, it is eradicable;

4. Every citizen of the United States having tuberculosis should have the privilege of living in a tuberculosis hospital; every such citizen should be strongly advised to accept such privilege;

5. Hospitals for cures are almost as essential as hospitals for homes;

6. A temporary residence in a tuberculosis hospital (if the patient can not remain) is desirable, as in such a residence hygienic laws, regulation of expectorating and danger from contagion can be inculcated;

7. Crowding, bad ventilation and bad drainage are potent factors in the propagation of the disease; this applies as strongly to animals as to man;

8. The present method of arrangement and management of eleemosynary institutions, and especially those in which restraint is a factor, are productive of tuberculosis;

9. The condition of the animals furnishing food in the vicinity of large cities is a subject for consideration by the authorities;

10. While American statistics are so incomplete as to be misleading, nevertheless, it is our opinion that the death-rate from tuberculosis in this country (rural and town population together) does not exceed one-ninth of the death-rate from all causes;

11. While the number of people dying from tuberculosis appears to be decreasing, nevertheless, excluding pneumonia, tuberculosis destroys more lives than all the remainder of the contagious diseases combined;

12. This Section should continue a committee on tuberculosis;

13. The proceedings, papers, statistics, etc., of this committee should be published;

14. That the secretary of this Section be instructed to communicate with the business committee of the general Association relative to these resolutions.

STATE PROVISION FOR THE TREATMENT OF THE CONSUMPTIVE POOR.*

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The only ground on which state charities can be justified is that of self-protection. In the case of the dependent classes, such as the insane, the deaf-mutes and the blind, protection against injury to life and property, or against the loss to society arising from enforced idleness and lack of education on the part of the sufferers, furnishes the excuse. In the case of infectious diseases, the danger to health and life from the extension of such disease justifies the erection of contagious-disease hospitals of all kinds and the expenditure of large amounts of money in the establishment and maintenance of quarantine stations. The foundation and support of hospitals simply for the relief of suffering and healing of diseases is, from the standpoint of strict political economy and true statesmanship, a flagrant misuse of public funds, and leads to serious abuses.

In the year 1898, the legislature of Pennsylvania appropriated more than three-quarters of a million dollars for the support of general hospitals, every one of which should have been sustained entirely by the community to whose poor it ministered. To lavish the public wealth in this way is simply to create a fund for the manufacture of paupers.

It is only the comparatively recent but now universally accepted discovery of the communicability of tuberculosis which has made it possible for a sanitarian to urge the state to contribute to the care of the consumptive poor, as such. So long as consumption was simply due to heredity and general environment, such a plea had no basis in any proper conception of the duty of the government to the individual. Granted that one person in fifty was affected with tuberculosis, and that there were over a million and a quarter cases of consumption in the United States, what business was that of the state? People must die of something. Why not as well of consumption as of heart disease or Bright's disease? And if there was suffering among the poor consumptives,

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that was a matter for consideration and relief by private philanthropy. But once admit that consumption is an infectious and therefore a preventable disease, and presto, the whole situation is changed. The state is losing tens of thousands of valuable productive lives prematurely and unnecessarily every year. Thousands more are wasting their time in taking care of those who are thus slowly dying. Here is a terrible leak in the public resources, a leak which we now know how to stop and which, therefore, we must stop. That which would before have been an unwarrantable and vicious use of the public treasure now becomes an imperative duty on the part of the state as the custodian of the material prosperity of its people. To put the matter in a nutshell, preventive medicine is the legitimate work of the state, remedial medicine is not, except so far as it may incidentally be preventive.

On the evening of the tenth day of January of the present year, a meeting of great interest in this regard was held in the city of Philadelphia. This was a joint meeting of the Philadelphia County Medical Society and the Pennsylvania Society for the Prevention of Tuberculosis. The subject for discussion was "The Duty of the State Toward Those Afflicted with Pulmonary Tuberculosis." It may not be generally known that many members of the Pennsylvania Society for the Prevention of Tuberculosis are not physicians. The object of drawing together associations thus differently constituted, was, as stated by the president of the Philadelphia County Medical Society, "through joint discussions to bring about more intelligent co-operation between physicians and the members of the general community in the preservation of the public health." All of the liberal professions and the mercantile community were represented among those who read papers or participated in the discussions. The subject was therefore treated from many standpoints, and in each instance by one well qualified by experience to speak. Boston and New York as well as Philadelphia contributed to the interest and value of the occasion. What I shall say at the present time will be mainly gathered from the report of this meeting, and I shall make no further apology for borrowing either the arguments or the facts then presented. I have already had occasion to call the attention of this Section to the admirable work of the Pennsylvania Society for the Prevention of Tuberculosis, and to urge upon members the importance of establishing similar societies in their own cities and states. The founder and first president of this society, Dr. Lawrence F. Flick, of Philadelphia, read the first paper of the evening, in which he unfolded the plans of that association. Their program was first of all education, not of the legislators only, but of the entire people. For this purpose great numbers of tracts, clearly expressed, in popular style, had been distributed, on such subjects as, "How Individuals Can Avoid Consumption," "How Consumptives May Avoid Giving It to Others," "What Storekeepers, Hotel-keepers and Others Might Do to Aid in Its Prevention." The registration of tuberculosis, both in human beings and domestic animals, is also urged. But beyond all other measures in practical efficiency was placed the establishment of hospitals and sanatoria for consumptives. It was claimed that in England during the last half century a reduction of 50 per cent. in the death-rate from consumption had been brought about by the establishment of consumptive hospitals. There would be not the slightest necessity for compulsory isolation even were it considered important, as hundreds of poor consumptives are knocking at hospital doors for admission and are turned away hopeless, to suffer, linger and die, and in the meantime communicate the disease to their families and infect the houses in which they live. From having been considered a hereditary, incurable and ineradicable disease, consumption is now, on the contrary, looked upon by the profession as: 1, not hereditary but acquired; 2, as to a considerable extent amenable to treatment, and, 3, as possible of eradication as a scourge of the race by known methods. It is safe to claim that at least 20 per cent. can be cured, and 10 per cent. more can have the disease arrested, which amounts practically to the same thing. In Dr. Turban's sanatorium, at Davos, in Switzerland, of those in the third or advanced stage, 23.6 per cent. were absolutely or relatively cured, and 17 per cent were found to have remained so, when communicated with, years later.

The results obtained by the establishment of sanatoria for consumptives as private enterprises in Europe, and notably in Germany, were so gratifying as to lead the charitably inclined to feel that a burden of responsibility had thus been laid upon them for the extension of opportunities of this kind to those who were unable to pay for them. To such an extent has this idea been realized that in England there are now accommodations for about 5000 of these sufferers, either in hospitals for advanced cases, or in sanatoria for those in the earlier more curable stages. In the city of London there are six special hospitals of this kind. In the city of Philadelphia we have four. These are, 1, the Home for Consumptives, connected with which is the House of Mercy, for male consumptives, conducted by the Protestant Episcopal City Mission; 2, the Rush Hospital; 3, the Free Hospital for Poor Consumptives, which at the present time simply avails itself of certain wards in existing hospitals, and 4, the Jewish Hospital, which has set apart ten free beds for consumptive patients. The first named accommodates and treats an average of 119 patients annually; the second about 70, and the third 40.

In addition to these, the Philadelphia Hospital, connected with the Almshouse, has certain wards set apart for consumptives. But, "what are these among so many?" In the year 1898 the deaths from consumption in that city were 2590. The provision for the treatment of poor consumptives was actually for 297. The financial loss to the city from these premature deaths may safely be put down at $2,590,000, to say nothing of the loss of production during long illness. The state of Pennsylvania cares for 6000 insane, 3000 feeble-minded, deaf and dumb and blind, and 12,000 paupers. At least 15 per cent. of the insane die of tuberculosis, and yet no adequate special provision is made for their care by the state. General hospitals are justified by their responsibility for the health of their other inmates, which would be endangered by the presence of consumptives, in refusing the latter admittance to their wards. With our present knowledge such an intermingling, so far from being an act of mercy, would be little less than a crime. But it is not less a crime to allow this immense class of sufferers to go without hospital opportunities for care and treatment. The legislature of Pennsylvania passed an act some years since, appropriating the sum of $50,000 for two years, to be used by the State Board of Health, under certain restrictions, for the suppression of epidemics, prevention of diseases, and protection of human life in times of disease and disaster, when, in the opinion of the board, the conditions are so grave that "the local health author-

ities and individual and organized charity are unable to meet the emergency." It would be impossible to lay down in more definite terms the nature of the responsibility of the state for the furnishing of medical aid, or the limitations which should control such action on the one hand, or on the other to describe more accurately the character of the dangers which constantly threaten human life in the prevalence of consumption. They are of such enormous proportions that the local authorities and individual and even organized charity are utterly unable to cope with them. But we have, unfortunately, become so habituated to them that to declare that they constitute an "emergency" would only provoke a smile on the part of the officials who are entrusted with the disbursement of the fund. It has come to be considered the proper thing that one-seventh of our population should be cut off in the middle of its days, at the time of its greatest value to the state, by this single scourge. Hence, it becomes the duty of those who do appreciate the true proportions of this problem to become missionaries to spread abroad the knowledge both of the curability and the preventability of consumption, and at the same time of the necessity for hospital provision on a generous scale to secure these ends. Once the public has thoroughly grasped these ideas, legislators will not be slow in yielding to the pressure which will be brought to bear upon them for making such provision. In Europe this movement is already making encouraging headway. In Germany, France, Great Britain, Sweden, Belgium, Holland, Spain and Roumania much has been accomplished. As is well known, so great an interest has been excited that an International Congress of Tuberculosis has been held, attended not only by physicians and philanthropists, but by government officials and members of royal houses. The Swedish parliament recently voted 850,000 crowns for a sanatorium for consumptives in South Sweden and a gift of 2,200,000 crowns from the people to King Oscar has been, with a liberality as intelligent as it was generous, devoted by him to the establishment of similar foundations in northern and central Sweden. In this country we are not without encouraging signs. The New York State Board of Health has adopted resolutions urging the early construction of a State Sanatorium for Consumptives in the Adirondacks, at a cost of not less than $200,000. The legislature of that state has already pased a bill authorizing large cities to establish hospitals for sufferers from tuberculosis. Massachusetts has already in operation an institution of this kind at Rutland, which cost $150,000. In Illinois an effort is being made, with fair prospect of success, to obtain the assistance of the state in erecting a sanatorium to accommodate 300 patients. Similar enterprises are under consideration in Indiana and other states. In Pennsylvania an admirable site, comprising about five hundred acres on a mountain slope of about 1250 feet elevation, has been offered to the Pennsylvania Society for the Prevention of Tuberculosis, so soon as the funds can be obtained either from individuals or from the legislature for erecting the necessary buildings. The United States Government has established a sanatorium at Fort Bayard, N. M., for the care of such of its soldiers as may become affected with the disease. A movement which has already achieved so great a measure of success can not be stayed. The day is certain to come when state governments will recognize their responsibility in this regard, and there are those present who will live to see, in consequence, an immense diminution in the prevalence and mortality of a disease which at this moment is disabling to a greater or less extent a million and a quarter of the people of this country and which kills four and a half times as many as smallpox, scarlet fever, typhoid fever and diphtheria combined.

SOME THOUGHTS ON OVERCROWDING AND TUBERCULOSIS.*

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I have been requested by the Secretary of the Committee on Tuberculosis, appointed by the President of THE AMERICAN MEDICAL ASSOCIATION, to write a few words on the etiology of tuberculosis, more particularly on the relation which overcrowding bears to the frequency of consumption. To offer something new in this line is really difficult, for the subject has been treated so many times by abler minds than my own.

In some of my previous publications[1] I have spoken of numerous visits made to the tenements of New York, of the heartrending conditions I have found there among consumptives, and of the sweatshops as agents in the propagation of disease, but, after all, I presume it can not be repeated too often that the tuberculosis problem, especially in our large cities, will never be solved unless we begin by improving the sanitary condition of the tenements. There should be laws to make the building of any but model tenement houses impossible, and overcrowding should be made punishable. Let this inhumanity to man no longer be permitted. Let the greedy owner of the dark, filthy tenement house, who is not content unless he makes 18 per cent. on his investment, feel the strong hand of the law whenever by the violation of the health ordinances the lives of his tenants become endangered. How can we ever hope, even with numerous sanatoria and special hospitals, to reduce in any marked degree the morbidity and mortality from tuberculosis as long as we allow the main conditions which favor the propagation of the disease to exist or to be daily created anew? First among these we must mention the conditions which have a tendency to undermine the constitution, bringing about a state which we might call physiological poverty, that is to say, a condition in which the natural organs of defense are no longer capable of throwing off pathogenic micro-organisms, to the inhalation of which all of us are perhaps more or less exposed. A family of from six to ten, living in three rooms, of which perhaps one only receives direct light and air, can not possibly remain in a state of health for any length of time. The vitiated air is breathed over and over again, and even the desire for breathing naturally and deeply, if it ever existed, will become less and less. But besides this lack of air and light, intemperance and underfeeding—two evils which to my mind are not infrequently the result of the overcrowding of the cheerless homes of the toilers—aid to create in the human organism the very best soil for the invasion, growth and development of the tubercle bacilli.

The second condition which favors the propagation of tuberculosis is the almost absolute lack of precaution taken by consumptive patients dwelling in these tenements to dispose of the infectious sputum. These patients, still able to be about, will disseminate their dis-

* Presented in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

1. "Pulmonary Tuberculosis: Its Modern Prophylaxis and the Treatment in Special Institutions and at Home." P. Blakiston's Son & Co., Philadelphia, 1899. "The Tenements and Tuberculosis," THE JOURNAL, May 12, 1900.

ease by expectorating indiscriminately in the dark hallways, in their workshop, or wherever they may happen to be. The patients in the more advanced stages of the disease, who, owing to lack of hospital facilities, must remain in the dark bedrooms where any effective prophylaxis is impossible even with the best intention, constitute, of course, permanent local centers of infection.

Some phthisio-therapeutists and sanitarians think that the compulsory reporting of all cases of consumption would materially reduce these foci of infection. The impracticability of such measures seems evident when we consider that nearly every sixth individual is suffering from tuberculosis in some form or other. Even where such laws exist my experience has convinced me that the cases not reported and not treated are more numerous than the reported and treated ones, and that those once reported, if not taken to a special institution, will often be obliged to move, or will move voluntarily, and so again sight and control of them are lost.

We must do away with the overcrowded, dark, dreary, dirty tenements of our cities, which foster intemperance, immorality and crime, and which by depriving the individual of pure fresh air and sunlight predispose strongly to tuberculosis and other diseases.

Houses built on damp soil, whether in cities or country, should be torn down, for no matter how perfect the sanitary arrangement of the building may be, damp soil will foster tuberculosis.

Reporting and even sending a sanitary inspector can have no lasting beneficial effect when the consumptive invalid of the family is obliged to continue to live under conditions which are in themselves phthisio-genetic. I am an ardent believer in individual and general public education in regard to prophylaxis of tuberculosis, and I am the last to underestimate the value of such instruction, but the best fruits can come from it only when we can offer to the consumptive dweller of the tenement ways and means to do better, or to get out of his unhealthy environments. Our present knowledge in phthisio-therapy has taught us that a tuberculous patient may be successfully treated wherever there is plenty of air and light. Not only tuberculosis, but many other diseases will disappear in proportion to the number of model tenement houses created by the efforts of our statesmen, municipal governments, or the individual efforts of philanthropists.

We must have sanatoria and special institutions to treat the curable and isolate the hopeless consumptive poor; but we must have a far greater number of model tenement houses, built on good soil, with good drainage, houses where sunlight can enter in abundance, where overcrowding is impossible, and which are constructed in a manner that pure air can have access to every room; where privacy is guaranteed and where the honest toiler will find pleasure in remaining at home. Give to the workingman a pleasant, clean, healthy and comfortable home and the rumshop will have fewer attractions for him. The money formerly spent for liquor will go to the butcher and baker for the better nutrition of himself and his family, and underfeeding—the other important phthisio-genetic factor—will be materially lessened.

The overcrowding of schools, bad ventilation of the classrooms, too much indoor work during school-life and not enough outdoor play will, of course, further any tendency to tuberculosis in childhood. Our city fathers, boards of education and teachers must unite in rational reforms. Consumptive school-teachers should not allowed to teach in public schools, neither should consumptive pupils be admitted to these institutions. For the latter school-sanatoria in healthy localities should be created, and the unfortunate tuberculous teacher in the incipient stage of the disease might here also find useful employment and regain health.

Overcrowded prisons, asylums and almshouses, of course, not infrequently contain numerous foci of tuberculous infection, and the close contact in which the prisoners and patients live, facilitates the propagation of the disease. More cubic space per individual, more systematic ventilation, and the isolation of tuberculous invalids are the remedies which should be urgently applied. The experiment in Alabama with a convict camp for tuberculous offenders seems an interesting and useful innovation in the line of modern prophylaxis of tuberculosis.

Ship-builders and ship-owners also should bear in mind that the intensely crowded quarters to which the average sailor is confined during his hours of rest and sleep are absolutely detrimental to his health, and even the outdoor life during the hours of work can not counteract the deleterious influence which the vitiated air of the forecastle exerts on the health of the brave seaman. A tuberculous sailor, still at work, is almost certain to infect his comrades, for there is hardly any class of people which live in more crowded quarters than the seamen. The ship-builders and masters of vessels must seek to remedy this evil.

Factories and workshops should be submitted to sanitary inspection to prevent the workrooms from being overcrowded, and to see that they are properly ventilated.

Lastly, the physicians, statesmen and philanthropists, interested in the solution of the tuberculosis problem, have, besides working for the better housing of the poor and the creation of special institutions for the treatment of consumptives, an additional mission to perform. The tide of emigration from village to city should be reversed. If tuberculosis has made its appearance in a family living in a large city the physician should exert all his influence to induce, especially the younger members, to migrate to the country and seek outdoor occupations. Statesmen should protect the interests of the farmer, so that farming will have more attraction to the rising generation than it has had in the last few decades; and philanthropists should aid the statesmen by endowing institutions for instruction in scientific and profitable agriculture, and also by providing healthful amusements in country districts, and thus make living outside of large cities more interesting.

The creation of schools of forestry in connection with the preservation and cultivation of forests in many states where a wasteful destruction of trees is now carried on, would give useful and healthful employment to a number of people, as well as render the regions more healthful. It would offer attractive careers to young men seeking to overcome hereditary or acquired tendencies to tuberculous diseases.

I submit these few thoughts on overcrowding and tuberculosis in the hope that they may be helpful to those who have the desire and the means to aid in the combat against the "great white plague."

16 West Ninety-fifth Street.

Igazol.—A committee was appointed to decide on the merits of Cervello's "igazol" in the treatment of tuberculosis, at San Paulo, Brazil, where it was tested on a large scale in one of the hospitals. The report, published in the *Revista Medica* of June 15, states that no favorable results of any kind followed its use.

CLIMATE FOR TUBERCULOSIS.*

NORMAN BRIDGE, M.D.

CHICAGO AND LOS ANGELES.

Climate is supposed to be the major force in the cure of consumption. It is important, but only one element in the proper management of this disease. The vital object is to increase the resisting power to the bacillus; everything that tends toward that end is important. Climate may be made to help toward it in some cases; but it does not always help—sometimes it hinders, and greatly does so. It is a pitiable waste when it does not help; it ought always to benefit somewhat or not be invoked. Many times it is worse than useless, and brings disappointment and chagrin where it ought to give comfort, and so throws discredit on the whole subject. A measure capable of so much good ought not to be discredited by the unwise use of it, or by unwarrantable belief in it. Fatuous faith leads to neglect of other needful things. Because climate is valuable and has great possibilities for good, there is no occasion for rhapsodies about it that are sure to curtail its usefulness for the numerous victims of the most pathetic disease ever known.

To increase the resisting power of the body—reduced in some part at least or the disease could not have started—is the great requirement. For this all the resources of the system must be conserved, and no influence that will increase the power can be spared. Increased susceptibility from reduced power comes of too hard work of body and mind, or some of the cells thereof, and so blood-making and capacity for bodily exercise are reduced.

The monotony of one kind of work with a narrow range of exercise always lowers the vitality. Practically there are no occupations that are entirely hygienic and conserve all the powers of life; and, especially, can no indoor work ever do this.

Monotony, work and worry lead to a lowering of vitality always, unless they are counteracted by sufficient vacations and change. The digestive power is reduced in this way; then blood-making fails and tuberculosis is invited. Fermentative and other poisons accumulate in the system as a result and militate against recovery.

The needs of the tuberculous patient are not one, but several, and apart from special medication include: 1, rest from work; 2, change of work and cares, so as to shift the load from parts that have borne it to those that are fresh; 3, painstaking attention to the digestion and the feeding and nutrition of the body; 4, long hours of sleep; 5, outdoor life, much sunshine, and fresh air every hour; 6, a change of surroundings for novelty and pleasure, and to help shift the load, and finally 7, a change of climate, to a better one if possible, but a change anyway. Not one measure, therefore, but seven, are needed, and change of climate helps or ensures some of the others, but not all, and, great as climate is, it is not everything.

The chief value of any climate for tuberculosis rests in the ability of the patient, without depression or hardship, or much labor to live a large part of the time out of doors and to breathe the pure air all night. This is many fold more valuable than all special treatments combined. The reason of all its value has probably not yet been explained; we simply know that we have in our houses and work-inclosures some influence that is detrimental, and that we can hardly hope to make the atmosphere of our habitations as good as that of the skies. We think we know all about the physics and chemistry of the atmosphere, but after a century we have found that there is an element within it—argon—that constitutes 1 per cent. of its bulk and which had eluded the chemists for all these decades. The value of the outer air is founded firmly on clinical evidence, whatever chemistry says.

Sunlight is a good element of a proper climate for tuberculosis. It helps the patients in body and spirits, and kills the bacilli that it can touch for a few hours. It probably also represses or destroys other harmful influences, and helps to keep the earth's surface free of too much water, a thing that is charged with spreading tuberculosis.

Altitude helps some cases, especially the incipient ones. It causes, for a time at least, an increase in the number of red corpuscles—of reduced size perhaps—and often starts an improvement in nutrition which may be the beginning of recovery.

Dryness of air is almost universally regarded, and justly so, as one of the best qualities of a proper climate. It minifies the surface earth water and counteracts its injurious influences; it increases the power of the sunshine to kill bacilli; it lessens the liquidity of the phlegm and reduces the amount of expectoration of consumptives, and calms the cough of many of them. That it has much influence on the march of the disease deep in the lung tissue, where the respired air can not touch, is not so well proved. These are the chief advantages of the best climate—advantages that are not likely to be discredited hereafter. But all climatic influences for good may be rendered nugatory, and often are, by lack of other conditions that are as vital as any that have been named.

Homesickness wholly counteracts any good effect of climate in many cases, and in others does worse. Patients are often sent away alone, severing all their previous associations and ties, and are expected to shift for themselves among strangers, to keep up their courage, and in the face of depressing symptoms to gain in health. The average of them can not do it, and friends or relatives or nurses should always accompany and care for them.

By managing their own diet and eating only when they are hungry, and such foods as fancy moves them to, they practice a moderate starvation when they ought to have forced feeding in six eatings each day. They believe that the more they exercise and develop their muscles the better, which is untrue; and they will force themselves as an act of duty and against their inclination to exercise when they have fever, and always to their great detriment.

They often select unwholesome rooms and nearly always keep housed with poor or no ventilation for full sixteen hours in the twenty-four. They have the most amazing fear of night air and of cold-catching; they can scarcely be convinced that night air is better to breathe than day air and that if the body is kept warm there is no danger of cold-taking from currents of air night or day.

Only those patients recover from pulmonary tuberculosis who have, under good hygiene and treatment, nearly enough resisting power within their bodies to counteract the disease. With other things as favorable as possible, or nearly so, a good climate—and a change from the home climate—is an influence that will often tip the balance in favor of recovery. Nothing more than this

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should be asked of any climatic resource, and it is extremely unwise to journey to a distant country at great inconvenience and expense, and to expect, by so doing, to excuse the omission and neglect of those measures of wholesome living for the sick, that can be had in almost any climate, and that are justified by the experience of all time, as well as by common sense.

TUBERCULOSIS—ITS ZOOLOGIC AND GEOGRAPHIC DISTRIBUTION.*

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CHICAGO.

Tuberculosis is the most widely spread of all diseases. This is true, whether we view the question from a zoologic or a geographic standpoint. This extent of distribution must be taken into account in determining the importance of the disease, the possibility of eradicating and the means of combating it. I will state first many somewhat isolated facts, and later I will draw conclusions.

ZOOLOGIC DISTRIBUTION.

Cattle.—Amongst domestic animals the cow is unquestionably most important from the standpoint of the danger from tuberculosis. The reason for this is that the one very abundant source of nourishment that is eaten raw is derived from the cow. The eating of uncooked meats, of half-done or smoked sausages, threatens a limited number of people. The drinking of milk threatens all the people. The artificial conditions under which milk cows are kept, the warm, snug, draught-free, and therefore dangerous, stables, the forced feeding and the continuous milking, in short, the strenuous life makes the milk cow very susceptible to tuberculosis. The proportion of tuberculosis amongst oxen is much smaller. The figures are about one-tenth as high as for milk cows. Calves and yearlings have about one five-hundredth as much tuberculosis as milkers have. The statistics of the Illinois Board of Live Stock Commissioners show that in the herds examined—mostly those of the peri-urban dairy districts—16 per cent. were tuberculous. In the herds of Wisconsin, where some suspicion of disease existed, tests have shown 10 per cent. of tuberculosis. A correspondent informs me that in Colorado around the cities 2 per cent. of the cattle are tuberculous; that in the range cattle there is none. Hirsch says that in the range cattle of Brazil there is no tuberculosis. Around the cities the generally imported dairy cows show 15 per cent. In the mountains of Switzerland and in the highlands of Hungary there is almost no bovine tuberculosis. In the dairy districts of North Germany 25 per cent. of the slaughter-house cattle, to say nothing of the dairy cattle, are tuberculous.

In Pennsylvania, the later figures of Dr. Pearson show that 11.6 per cent. of the milk cows examined are tuberculous. In Massachusetts in 1895-97 fully 30 per cent. of the milk cows examined showed tuberculosis. In Connecticut in 1896, 14 per cent. of 6304 cows examined were tuberculous. In the districts near the larger cities 29 per cent. showed the disease. In the more thinly settled districts 99 per cent. were tuberculous.

Horses.—Chauveau produced experimental tuberculosis in the horse and in the ass. Cadeac and Morot report two cases in horses. Thompson reports one case. Nocard says the horse is very refractory to experimental tuberculosis, but is very frequently affected by tuberculosis contracted in the ordinary way. Tuberculosis in the horse is of two distinct types, the pulmonary and the abdominal. Nocard is of the opinion that the pulmonary type is due to the human bacillus, the abdominal type to the aviary bacillus. The literature of comparative pathology and of veterinary medicine teems with reports of tuberculosis in the horse. This fact proves, first, that the disease is not exceedingly widespread, and, second, that it is fairly abundant. We are to bear in mind that post-mortem sectioning of the horse is the exception.

Hogs.—There is no question as to the prevalence of tuberculosis in hogs. The figures for Berlin, in 1893 to 1894, were .5 to .9 per cent. Johne says that, in Saxony, in 1891, 1.07 per cent. of the hogs slaughtered showed tuberculosis. Thomassen says that the statistics of Amsterdam showed 1 per cent. of tuberculosis in the slaughter-house hogs. The Rouen statistics showed .04 per cent. Tuberculosis in the hog is usually of the abdominal type. These figures gain importance when we recall that it is the thriftiest of all the yearling hogs that gets to the slaughter-house. The Copenhagen statistics show the effect of feeding hogs on the skim milk or slime from the creameries.

Goats and Sheep.—Colin has given tuberculosis to sheep by inoculation. Bollinger reports a case in sheep. Cadiot, Gilbert and Roger, Moule and Siegen report cases. Lydtin reports three cases in goats; Thomassen one. Colin produced the disease in a goat.

I have made post-mortems on two tubercular Aubeaus and two tuberculous mountain sheep, members of the goat and sheep family. The literature contains records of a moderate number of cases. Morrison says sheep and goats get tuberculosis when injected intravenously, or continuously fed on tubercle bacilli.

Dogs.—The museum of the New Veterinary College, England, contains a specimen of tubercular pericarditis in the dog. Villeman reported six cases of tuberculosis in dogs. Bertheau, Weichselbaum and Verageuth, Koch, Gamaleta, Maffucci, Zagari, Mallin, Wells, Johne, Marcus, and hundreds of others report one or more cases in the dog. I have seen a case of tuberculosis in a black wolf—a member of the dog family. Jensen found 15 cases in eleven months. Bang reported 13 cases. Eiber, at Dresden, posted 400 dogs, finding tuberculosis in 2.75 per cent. Cadiot posted 9000 dogs at Dálfort; in two years 40 per cent. showed tuberculosis. The disease in the dog is found especially in the lungs. Strauss says: "It is, above all, by reason of his cohabitation with men attacked by tuberculosis that tubercular infection occurs in dogs." Johne reports a case confirming this view. Czoker reports four similar cases.

Cats.—Villemen produced experimental tuberculosis in a cat. Viseur made a cat tuberculous by feeding it the tubercular lungs of a cow. This was confirmed by Nocard. Jensen at Copenhagen posted 25 tuberculous cats in two years. Davis reports one case in a cat. I have held post-mortems on three tuberculous lions and one tiger—members of the cat family.

Rabbits and Guinea-Pigs.—While these animals are habitually used for experimental tuberculosis, and possess a very great susceptibility, they seldom contract the disease spontaneously. Strauss says: "Rabbits and guinea-pigs are very rarely the subject of spontaneous tuberculosis."

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Barn-yard Fowls.—Tuberculosis is very frequently found in nearly all the varieties of domestic fowls. Strauss says that it is found in roosters, hens, pheasants, turkeys, pigeons, canaries, finches, ostriches, swans, vultures, owls and carnivorous birds, as well as grain feeders. Zurn, in posting 600 chickens, found 10 per cent. tuberculous. The Rhode Island Experiment Station found 15 per cent. of a lot of incubator chickens tuberculous. Bouley, Devillers and Leugleu cited cases to prove that chickens could contract the disease from being among tuberculous people. Ribbert confirms this. Johne, Mollereau, Chelkowski, De Lamelleree, Cagny, Koch and Nocard publish some confirmatory facts. Bray, of Kansas City, reports an infection of a poultry yard by a man with tuberculosis. Strauss sums up the question as follows: "It appears, then, to be established that fowls can become tubercular from eating the excretions of tuberculous animals." Nocard has demonstrated that the avian form of the tubercle bacillus is a modification of the human, just as Theobold Smith has demonstrated certain differences between the human and the bovine forms. Strauss says that ducks and geese are very refractory. He quotes Pomay's experiences, showing that in a poultry yard in which a great many chickens and turkeys died of tuberculosis, the ducks and geese, living right with them, remained healthy.

Menagerie Animals.—Strauss reports a post-mortem made by himself on a tuberculous lion in the Paris Zoological Garden. During the last two years I have posted three tuberculous lions in Lincoln Park Zoological Garden. In addition to this, I have found tuberculosis in the following animals: one tiger, one black wolf, one rock python, two mountain sheep, two elk, two antelopes, two species of goat, fifty monkeys of all species and kinds.

In the London Zoological Garden, according to Forbes, 43 per cent. of all the monkeys die of tuberculosis. In the Paris Jardin d'Acclimation 20 per cent. of the deaths are due to tuberculosis. In the Zoological Garden, Frankfurt-sur-le-Main, 22 per cent. die of this disease. In my observations, extending over two years, tuberculosis has caused 94 per cent. of the deaths. This observation is on 50 monkeys, with post-mortems.

Other Animals.—Strauss quotes Koch and others as finding tuberculosis in white and brown rats, white and field mice. McEachren, chief veterinary inspector of Canada, says: "Rats, mice and other vermin not only contract tuberculosis, but spread the disease." Sibley reports a case in a serpent, tropidonotis natrix, an Italian snake, dying after a captivity of some months in a zoological garden. At the Berlin Congress the same author reported other cases in snakes—in grass snakes and common English vipers. In this connection I report the case of a python kept for several years in a glass case in the animal house, at a temperature never falling below 70 F., and showing tuberculosis post-mortem.

Despeignes has produced tuberculosis in frogs and tritons kept at room temperature. Lortet and Despeignes have demonstrated that tubercle bacilli can be transported and spread by earthworms.

Geographic Distribution.—Hirsch says that tuberculosis may be designated an ubiquitous disease in the strictest meaning of the term. Whatever reason there may have been for doubt as to the accuracy of this statement at the time of Hirsch has since been removed. The few places in which no tuberculosis had been reported in his day have since been found to furnish no exceptions to the general rule.

So far as I have been able to gather, in the larger cities of Europe, the death-rate from tuberculosis of all forms constitutes something more than one-fifth of the total death-rate. The death-rate is about 350 per year per 100,000. This is approximately true of every continental country.

Austria and Hungary will run a little higher than Holland and Switzerland. In the smaller towns and country the death-rate is about 260 per year per 100,000 inhabitants. In Great Britain the situation is somewhat better, the death-rate being in the vicinity of 225 per year per 100,000 inhabitants. According to Hirsch, Iceland, the Faroe Islands, the Hebrides and Shetland Islands have some, but not much, tuberculosis. According to data received from the government, the amount of tuberculosis in Iceland is about 150 cases per year. This, considering the open life of the people, the lack of crowding and the primitive conditions of life, together with the inaccuracy as to death-rate that must prevail amongst isolated folk, constitutes a considerable mortality. The northernmost parts of Norway and Russia appear to have but little tuberculosis, yet from all of these districts information must be meager. That it is to be found is certain. In the account of the Wellman Expedition there is reference to a polar bear killed on the ice and showing tuberculosis. Nansen records bacteria and bacterial diseases in the coldest latitudes. He had no opportunity to observe tuberculosis.

It is found in Armenia, Syria, Persia, Mesopotamia, Greece, Arabia, India, Turkey, Ceylon, the East Indies, China and Japan, the Philippines, Sumatra, in all the islands of the Southern Pacific and in Australia. In Africa information is necessarily insufficient, but that which we have is to the effect that the conditions there are much the same as elsewhere. Wherever, in the interior, lives are wild and houses are unknown, tuberculosis is present, but rare. On the coast, along the waterways, along the channels of communication, wherever civilization has touched, tuberculosis is rife. Generally speaking, the disease runs a rapid course. The housed native, whether he be Bedouin or Kaffir, suffers to the maximum extent. The formerly supposed immunity of Algiers, Morocco and those portions of the Mediterranean shore has not been sustained by fuller information.

When we come to America, we find the disease widely spread. A recent article in the *Century Magazine,* on the giant Indians of Terra del Fuego, mentions their great robustness, so long as they stay away from civilization, but their rapid extinction by tuberculosis whenever they approach the ways of the white man. In Argentina, Uruguay, Paraguay, Brazil, Chili, Peru, Ecuador, Bolivia and the countries of the Caribbean littoral, it is found much as in Africa. In the interior, in the scattered habitations of the higher elevations there is some tuberculosis, but not much. Along the channels of travel there is an increased amount. In Rio Janeiro and Pernambuco the death-rate is 350 and 520 per 100,000, respectively. In Mexico and all the countries of South America there is the same story—the disease rarely found in the sparsely settled interior, very virulent and very abundant in the more thickly settled littoral. In all the islands of the Caribbean Sea there is much. In Cuba it kills more people than do malaria and yellow fever combined. Canada has but little less than the more densely populated United States. In the United States, according to the census of 1890, 103,000 people died with tuberculosis during the preceding year. It is the opinion of a statistician of au-

thority connected with the census office, William King, that this figure is 30 per cent. too low. This would make 143,000, or about 210 to each 100,000 inhabitants. It constitutes about one-ninth of the total death-rate. In the city of Chicago it constitutes one-eighth of the total death-rate.

I offer the following conclusions:

1. Every animal having tuberculosis is a center for the maintenance and spread of tuberculosis. We must admit great variance in danger, according to the animal affected. The danger from the cow, by reason of the fact that we drink milk unboiled, is great. The danger from the horse is much less. In spite of this variance the proposition commends itself. Each of the excretions may contain tubercle bacilli. These go either directly into man, there to run the gamut of his defense, or into the world, there to perish, as a usual proposition, but, sometimes, to persist and threaten men and other animals.

2. Animal, and even aviary, tuberculosis is not identical with, but is related to, human tuberculosis. The translation of human into animal and aviary tuberculosis is also possible. A great deal of accurate, painstaking work has been done on the question of the transformation of human into bovine and avian tuberculosis, and vice versa. I mention the work of Theobold Smith and that of Nocard. Theobold Smith's work seems to me to show that while there are structural and biologic differences between the bovine and the human bacillus, the differences are not of great pathologic importance. This is borne out by cases of infection of people by bovine bacilli and of cows by human bacilli. In a short search of the literature I have found cases cited by Strauss, Bang, Colin, Nocard, the Illinois Board of Stock Commissioners, Bray, Crosse of Geneva, Cadeac and Bourney. The observations of this nature are far too numerous for recital. Nocard's work showed that human tubercle bacilli could be transformed into the avian form.

3. Inhalation and ingestion are the most frequent means by which tuberculosis is spread from man to man, from man to animals, and from animals to man.

4. The geographic distribution of tuberculosis is proof that the organism's extracorporal or saphrophytic life is of secondary importance. Argument in support of this proposition is found at every step by the bacteriologist. If this bacillus is found regardless of temperature, of soil moisture, of total rainfall, of elevation from the sea level, of prevailing winds, then it must follow that its essentials are resident in the animal body, where environment is more uniform. Nuttall's observation that the number of tubercle bacilli expectorated in the twenty-four hours is about three billions, would prove that only an infinitesimal number live outside the bodies of animals. The lesser number of cases of tuberculosis at high altitudes, away from cities, in dry climates, etc., is due to the improved condition of the people and of their hygienic conditions, such as lack of crowding, well-ventilated habitations, out-of-doors life, vigorous existence, etc., rather than difference in bacilli or in the effect of extracorporal environment on bacilli. However, we can not altogether deny the power of sunshine and drying on the bacilli that lie exposed.

5. There is abundant evidence that the bacillus is modified by the bodies through which it passes. Such is the teaching of the work of Bang, of Smith, of Nocard, of Jones and many others.

6. While Proposition No. 5 is incontestable, there is no evidence that the disease will disappear by reason of a general immunity. In the contest waged between the system and this bacillus, the wandering cells and the chemical substances of the body play a lesser part than in almost any other of the infectious diseases. Protection is had by reason of the activity of the fixed tissue-cells of the body. In those diseases which are due to organisms violently poisonous to the human body, the reaction is sharp, the death or cure speedily results. The very mildness of tuberculosis is responsible for its ultimate severity. The fact that the system takes so little cognizance of it constitutes the difficulty. In consequence, immunity is less a factor than in any other infectious disease. By this, I mean special immunity. The general immunity that comes from great good health and resisting power must be allowed by all.

7. The decrease in the death-rate from tuberculosis is more apparent than real. I want to reassert my statement made in this section last year that, while fewer people seem to be dying of tuberculosis than formerly, the proportion between the death-rate from tuberculosis and that from other diseases is not decreasing. In this connection we must bear in mind the fallacy of taking, without great caution, statistics that antedate 1880. If we limit our comparisons to the period since 1890 we will not find any material decrease.

8. Tuberculosis is above all a disease of crowding, and therefore a disease of cities. The disposition of the age is toward city life, and therefore a slight decrease, or even no decrease, in tuberculosis constitutes a gain.

9. At some future date, in determining the question of favorable location in order that a man may escape tuberculosis himself, shield his family from it or get well, once the disease has been contracted, we must ask the following questions: *a.* What is the altitude? *b.* What is the percentage of sunshine and cloud? *c.* What is the soil moisture? *d.* What is the atmospheric moisture? *e.* What is the population per acre? *f.* What is the amount of tuberculosis present in men? *g.* What is the amount of tuberculosis in animals and birds? *h.* Is the mean temperature approximately that of the district from which the man is to go?

103 State Street.

TUBERCULOSIS IN PENNSYLVANIA.*

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PHILADELPHIA.

Pennsylvanians are beginning to take more interest in the subject of tuberculosis. In a state in which about eight thousand persons, nearly all of them in the prime of life, die of this disease each year, it ought to receive much more attention from those who have it in their power to reduce this unnecessary sacrifice of life. The first and last systematic study of consumption in Pennsylvania was made by the late Dr. William Pepper and the writer in 1886 for the American Climatological Association and was published in the Transactions of that society. It developed the fact that there is a great inequality in the distribution of this disease throughout the state. There are seventy counties in Pennsylvania. Some of them are sparsely inhabited, are deeply wooded; the country is wild; the elevations range in the neighborhood of two thousand feet or over. The children "born and raised" in these counties have purer air to

* Presented in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

breathe, purer water and milk to drink, a better chance to develop their sturdy chests, for they drive the cows to pasture, trudge to school in cold weather and help on the farm in summer. Neither they nor their parents may realize it, but they are, from our standpoint, the favored class in the general population. They are the survivors of representatives of the hardy pioneers who developed the natural resources of Pennsylvania.

In twelve or thirteen counties, such as Pike, Sullivan, Montour, Union, McKean, Forest, Elk and Cameron, there is only about one-fourth as much pulmonary tuberculosis in proportion to the population as in some of the more populous counties. At the other extreme we have Philadelphia, Delaware and Lancaster counties. These lie in the southeastern corner of the state. The air is warmer and more moist; the country is less than five hundred feet above sea-level. The soil contains a

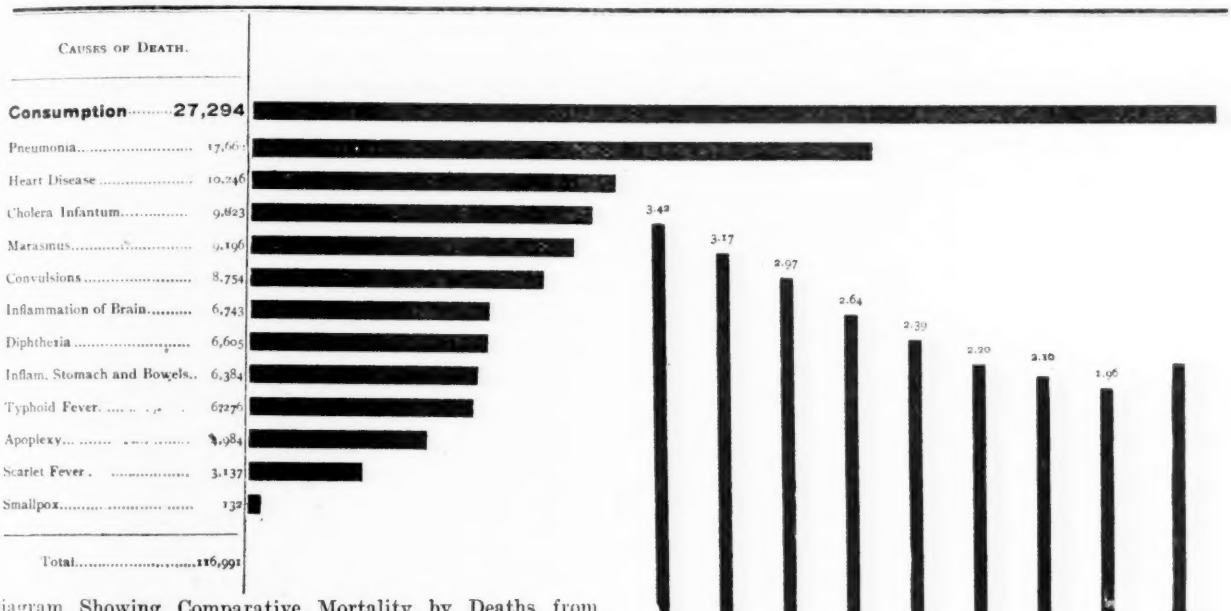


Diagram Showing Comparative Mortality by Deaths from Thirteen Prominent Causes of Death in Philadelphia, for the Ten Years, 1884-1893, inclusive.

considerable quantity of clay. The water-supply, for the cities at least, is from rivers that are contaminated, and the environment of the inhabitants of Philadelphia, Reading and Harrisburg is not conducive to the development of that bodily vigor that we find in the highlands of Pennsylvania. A glance at South street, Bainbridge or Fitzwater street, with poverty, vice and filth on every side, is explanation enough for the prevalence of tuberculosis. Children born and brought up amid such surroundings are an easy prey to any infectious disease.

In addition to moral and physical degeneration, the general lack of proper ventilation of city dwellings is a great predisposing agency in contracting consumption.

Atmospheric conditions in southeastern Pennsylvania favor the development of tuberculosis. The air is more humid, the rainfall is greater and the alternations of warm and cold weather throughout the winter and spring produce bronchitis and give rise to more colds than in the portion of the state where snow lies on the ground all through the winter and where the seasons are more sharply defined.

The prevalence of pulmonary tuberculosis compared with other diseases during a period of ten years is seen from the accompanying chart.

It will be noticed that the deaths from this disease in ten years exceed twenty-seven thousand, about equaling the combined deaths from diphtheria, typhoid fever, apoplexy, scarlet fever, smallpox and inflammation of the stomach and bowels. Between 1870 and 1897 there was a constant fall in the number of deaths from pulmonary tuberculosis in proportion to the population, but the proportion rose slightly in 1899. In fifteen years the percentage of deaths from pulmonary tuberculosis has fallen from 14 per cent. of all deaths to only 10 per cent. This has been a great gain. Just why the rise occurred in 1899 it is not possible to say precisely. It has been suggested that the better methods of diagnosis now in vogue show more cases to be tuberculous. Every hospital and outdoor clinic has its bacteriologic laboratory and the bureaus of health in Philadelphia and Pittsburg render valuable services to physicians uncon-

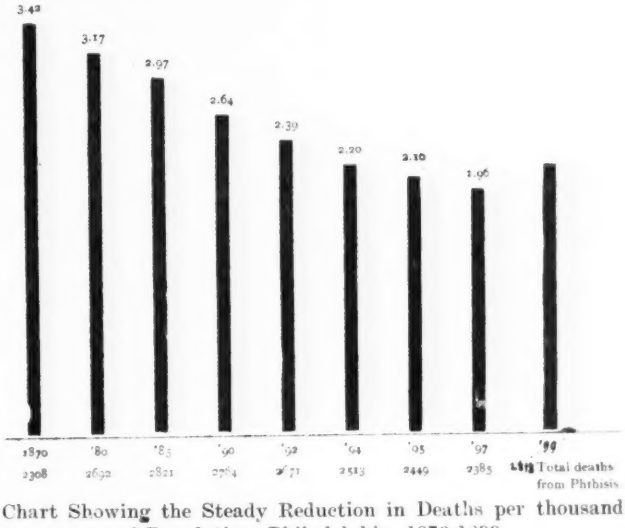


Chart Showing the Steady Reduction in Deaths per thousand of Population, Philadelphia, 1870-1899.

nected with the hospitals. In 1899, 675 examinations of sputum were made by Dr. A. C. Abbott and Dr. Stetson in the laboratory of the board of health of Philadelphia. Cases which might have been returned as having died of bronchitis, for example, were doubtless thus found to be tubercular. This may account for the remarkable reduction of the number of deaths recorded from bronchitis; last year they numbered only 389, but in former years they were five or six times that number. In the first six months of 1900 there were 1434 deaths from pulmonary tuberculosis, while in 1899 for a corresponding period there were 1507. A reduction in the rate will no doubt continue.

As physicians take advantage of the newer methods of diagnosis, including sputum examinations and X-rays, cases will be earlier recognized and cures accomplished in the incipient stage. The medical profession is justly entitled to claim more credit in this field than is usually accorded even by its own members. Physicians work harder and more hopefully in a given case of pulmonary disease than they did twenty-five years ago. Soundings are taken much oftener on the dangerous coast and the patient is not so often allowed

to drift and go to pieces on the treacherous reefs without one word of warning.

People are not so ignorant nowadays of the means of prevention of consumption and they have been educated not a little by physicians and by newspapers and special publications as to what should be done to limit the scourge. There may never be a time when there shall be no shipwrecks; there may never be a time when there shall be no consumption, but there is every prospect that some day deaths from this cause will be comparatively few.

The Pennsylvania Society for the Prevention of Tuberculosis was the first to be organized in this country, at least, with this particular end in view. It was organized on April 10, 1892, and incorporated in 1895. It has endeavored to educate the community in a knowledge of the true nature of consumption and the means now considered necessary to control or conquer this disease. The means by which this end is sought to be obtained are: by the publication and distribution of pamphlets; by constant efforts to induce those in influential positions to use their earnest efforts to prevent the spread of the disease; and by striving to obtain the requisite conditions whereby those early afflicted may be restored to usefulness, or for those far advanced, the safeguarding that will prevent the communication of infection to others. Between seventy-five and eighty thousand copies of tracts or pamphlets have been issued, principally for distribution in Pennsylvania. They have been forwarded, on request, to various states from Maine to Oregon and California, and even to Hawaii,[1] and have been reprinted, with slight changes, and circulated widely. No. 1 is entitled "How to Prevent Contracting Tuberculosis (consumption)." No. 2, "How those Suffering from Tuberculosis Can Avoid Giving it to Others." No. 3, "How Hotel-keepers Can Assist in Preventing the Spread of Tuberculosis." No. 4, "How Storekeepers and Manufacturers Can Help to Prevent the Spread of Tuberculosis." No. 5, "Predisposition to Disease." No. 3 has been translated into Hebrew for circulation among the Jewish population. These leaflets can be easily handed to those attending dispensaries and are always well received and additional copies are frequently asked for. This society will always furnish copies of its tracts free to those applying for them, or in large quantities at the cost of paper and printing.

A committee of the society has gone twice to Harrisburg, and has urged the committees on appropriations at two legislatures to provide for a hospital or sanitarium to be erected by the State of Pennsylvania in some mountain region suitable for this purpose. These measures have on both occasions been favorably recommended by the Board of Public Charities after full investigation and have been apparently well received by the committees on appropriations, much sympathy being shown by individual members. Other influences, however, including a false sense of economy and immense losses to the state through bank failures and dishonest officials have rendered our appeal futile. In the city of Philadelphia we have been confronted by a similar state of affairs. The apathy shown at home is in strong contrast with the enlightened and advanced attitude of foreign governments, which have established many institutions of their own and generously given aid to others. America is far behind England, Germany and France in this regard. While it is humiliating to acknowledge our deficiencies we must make them known in order to secure their correction by encouraging public-spirited men and women of our country to grapple with the herculean task.

The Pennsylvania Society for the Prevention of Tuberculosis requested the Board of Health to consider the advisability of issuing circulars or public notices, to be properly distributed, warning against the uncleanly, unnecessary and reprehensible practice of spitting in public places and conveyances. Such a circular was issued by the Board in 1895, and thousands of copies were widely distributed. Every one of the 1500 street cars in Philadelphia is provided with a conspicuous sign authorized by the Board of Health forbidding the practice of spitting on the floor. There is, however, no law in Pennsylvania under which any one can be arrested and punished for such an act on the streets or elsewhere, but the presence of the order of the Board has done a great deal to improve the appearance of the sidewalks and street cars.

In caring for the tuberculous three special corporations are devoted to this purpose. The oldest of these,

Administration House and Powers' Cottage, Hospital for Diseases of the Lungs, Chestnut Hill.

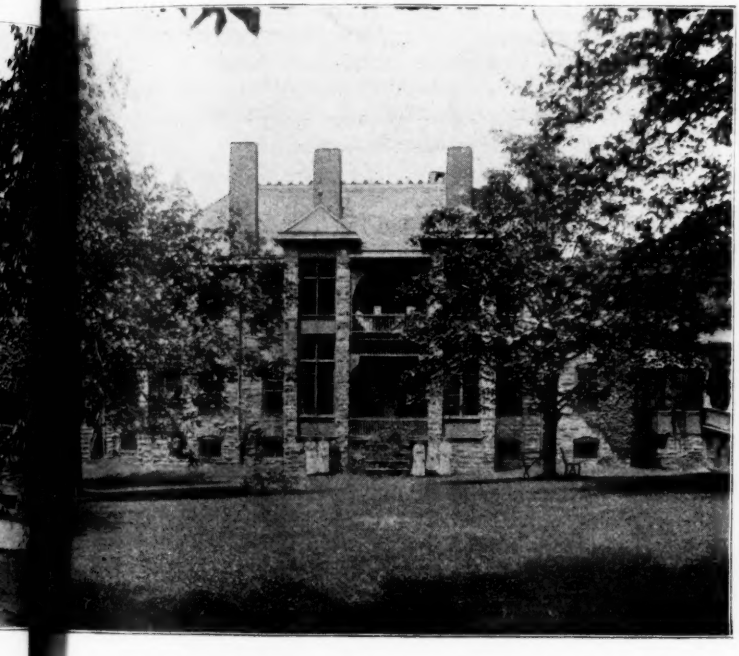
the Protestant Episcopal City Mission, has conducted for twenty-three years the Hospital for Diseases of the Lungs, at Chestnut Hill, about ten miles from the center of Philadelphia. It is devoted to the treatment of consumptive women. Sixty-five patients, in all stages of the disease, were admitted in 1899. The capacity is for 45, on the separate principle. Six were reported cured, 18 improved, 9 unimproved and 36 died. A department for men, called the "House of Mercy," at 411 Spruce street, in the heart of the city, admitted 45 during the year. Since their organization these institutions have cared for about 2900 patients. Dr. J. Solis-Cohen, Dr. Wm. M. Angney, Dr. C. A. Currie, Dr. F. W. Thomas and Dr. Robert H. Bolling are the attending physicians.

The Rush Hospital for Consumption and Allied Diseases was opened in 1892, and in 1895 occupied a site at 33d Street and Lancaster Avenue, West Philadelphia. It has a capacity for forty patients in wards, but its means at present do not admit a provision for more than 20. It has received annually $5000 from the State of Pennsylvania since its organization. There are two free

1 The number of deaths from pulmonary tuberculosis in Honolulu has more than doubled in the last five years.

beds, a dispensary is attached and fulfils an important work.

The Free Hospital for Poor Consumptives was organized in 1895 and incorporated in 1897. Its object is to give hospital treatment to the consumptive poor. It has not yet procured its own home, because all the money it has been able to raise has been expended for the pressing needs of cases which have presented themselves; it pays their board in existing hospitals in Philadelphia and elsewhere. These include St. Agnes', St. Mary's, the German, the Rush, the Hospital of the University of Pennsylvania and the Sanitarium Gabriels in the Adirondack mountains. During the five years of its existence, the Free Hospital for Poor Consumptives has paid out over $20,000 in board for urgent cases. Over $6000 was thus expended in 1899, and 124 persons received hospital treatment. The fund is supported by contributions of small amounts, and there are 320 glass globes placed in drug stores, banks and other available places, yielding a bountiful supply from those who could not be easily reached, and anonymous donors who would be unlikely to make formal subscriptions.



Hospital for Diseases of the Lungs, Chestnut Hill, Philadelphia

Steps are being taken to secure a desirable out-of-town property for the needs of this charity. Its president, Dr. Lawrence F. Flick, has shown indefatigable energy in creating an interest in its work. The receipts for the charitable work of the Free Hospital are now over $10,000 a year. It affords prompt relief and has a record of not one case of consumption having been turned away.

These four organizations, expending their effort in three different fields, supplement each other's work for the restriction of consumption. The Pennsylvania Society for the Prevention of Tuberculosis directs public attention to the principles underlying the nature of the disease, the reasons why a fight against tuberculosis is perfectly rational and its extinction almost within our grasp. Its work is to teach, to encourage private and to urge public action. It will gladly co-operate in all possible ways to advance the interests of hospitals for consumption.

The Hospital for Diseases of the Lungs, at Chestnut Hill, and the Rush Hospital receive cases and treat them as they present themselves and as their very limited endowments render possible. The Hospital for Poor Consumptives co-operates with every hospital in Philadelphia that will receive such patients and pays their way in existing institutions. It makes its plea to the public for support on the ground that the disease being contagious, the lot of the consumptive in these latter days has been growing harder and the only protection the well have against infection is by the hospitalization of the consumptive population. Besides the idea of personal protection is the fundamental idea of unselfish charity, which is the principal motive of the organization.

The best method of dealing with tuberculosis in cattle is a much simpler proposition. The Pennsylvania State Live Stock and Sanitary Board in the last two years has examined and tested with tuberculin at the expense of the state over 34,000 cattle, and of these over 5000 have been condemned and destroyed. The law provides that farmers shall be reimbursed, in order that hardship may not result. They receive an average of $22.30 per head; or not over $50 for registered stock and not over $25 for unregistered stock; in this way nearly $150,000 has been expended. To carry out this important work nearly 60,000 doses of tuberculin have been administered by authority of the state veterinarian, Dr. Leonard Pearson, of the University of Pennsylvania. He has encouraged the state to advance the funds to carry on the work; he has interested veterinarians all through Pennsylvania in the extermination of tuberculosis among cattle, by furnishing them the means of testing herds and inducing farmers to exercise greater care in preventing the spread of the disease throughout their herds and from animals to man. For the systematic, intelligent, far-reaching work which Dr. Pearson directs, and for his activity in ensuring conformity to the laws governing the importation of cattle into the state and the sale of meat and milk, every man, woman and child in the commonwealth is under obligation.

Pennsylvania may justly be proud of this feature of the struggle against tuberculosis, in which she takes a firm and liberal stand, yielding the palm to none.

3943 Chestnut Street.

MUNICIPAL REGULATION OF THE SPITTING HABIT.*

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Charles Dickens decided that, as a people, we lack the national instinct of cleanliness. He therefore designated Americans a nation of spitters. We no doubt deserve the designation, as the enlightened nations of Europe regard spitting on the floors and sidewalks as not only unsanitary, but an evidence of ill-breeding.

Five years ago the writer read a paper before the Allegheny County Medical Society recommending restriction and regulation of the spitting habit. Nine out of ten members who took part in the discussion agreed that restriction and regulation were needed. Six, however, of the nine thought any regulation impossible. "Women can, but men can not, change their filthy spitting habits."

* Presented in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

The writer believed that most men had the natural instinct of cleanliness and could be educated in this respect up to the level with women; and further, that the ignorant, unteachable and vicious could be controlled by the absolute fiat.

The principal aim of this paper, however, is a brief review of what has been accomplished in this most important sanitary reform.

During the past year the writer has been in communication with the boards or bureaus of health of twenty-two principal cities of the United States. The following were the four principal questions asked:

1. Have you a special anti-spitting ordinance?
2. If you have not, do you attempt to restrict spitting under your general nuisance act?
3. Date of your special ordinance or order forbidding expectorating on public floors and sidewalks.
4. Result of enforcement.

An analysis of the replies gives the following information: Special laws have been enacted in one-half of these cities, and about one-fourth are regulating partly or wholly under their general nuisance acts. These ordinances empower bureaus of health to abate or prohibit anything of an unsanitary character; indiscriminate spitting is included.

In the past five years, New York and Brooklyn, Newark, Columbus, Cleveland, San Francisco, Pittsburg, Washington, D. C., Rochester, New Orleans, Louisville and Baltimore have enacted special laws.

Denver, Atlantic City, and one or two others, have special laws under consideration.

The Boards of Health of Chicago and St. Louis have contented themselves with suggestions to the public, mainly through signs placed in street cars.

The Boards of Health of Philadelphia and Boston are doing good work under their general nuisance acts.

The Bureaus of Health of Detroit, Buffalo and St. Augustine are not in the working line. Hopes may be entertained for the two former, but, alas, St. Augustine! Poor St. Augustine! This ancient landmark answered the writer's inquiries thus: "Our native people would consider such an order an insult to their dignity. Can not stop a Florida cracker from spitting." May we interpret from this answer that these people love darkness rather than light?

Many superintendents of bureaus of health do not seem to realize that they can regulate spitting under their general nuisance act. Others do not have backbone enough to promulgate and enforce an order. Special ordinances, however, attract the attention of the general public and are probably more easily enforced.

New York and Brooklyn are under one law, with a maximum fine of $500, or one year's imprisonment. Newark has one of the best special laws yet enacted. It has been tested and sustained by the court. The offender was convicted and the fine imposed. The ordinance is as follows:

Whereas, expectorating in street railway cars or other public conveyances, or in any public building, is deemed by the board of health of the City of Newark to be prejudicial to the health of its citizens: Therefore, be it ordained by the board of health of the City of Newark as follows:

Section 1. No person shall expectorate upon the floor or any part of the interior of any street railway car or other public conveyance or any public building in the City of Newark.

Section 2. Any person who shall violate the provisions of this ordinance shall be fined for the first offense ten dollars ($10) and for the second and any subsequent offense twenty-five dollars ($25).

Section 3. Officials in charge and control of street railway cars or other public conveyances, or of any public buildings, shall post and keep posted in a conspicuous place one or more printed notices of the provisions of this ordinance prohibiting expectoration, and the conductor or conductors of any such cars or other public conveyances, and the janitor or persons in charge of any public building, shall call the attention of all violators of this ordinance to such notice, and shall report any violations thereof, with a description of the persons offending against this ordinance, immediately to the board of health of said city, and any such person failing to post the notices required by this section, and to make the report herein provided for, for failure so to do shall forfeit and pay a fine of five dollars ($5.)

Section 4. This ordinance shall take effect immediately.

Boston operates under her general nuisance ordinance, with a maximum fine of $100. The following is the text of this brief but concise order, issued by the Board of Health, in 1896, and revised in 1899.

The board of health hereby adjudges that the deposit of sputum in public places is a nuisance, source of filth, and cause of sickness, and hereby orders: That spitting upon the floor, platform or steps of any railroad or railway station, car, public building, hall, church, theater, market, or any sidewalk immediately connected with such public places, be, and hereby is, prohibited.

In reply to the writer's special inquiry, the president reports: "The result of the enforcement is a most remarkable change from filth to cleanliness."

The courts of Newark and San Francisco have sustained their anti-spitting laws. The offenders were convicted and the penalties imposed. A millionaire was convicted by the superior court and the judgment sustained by the supreme court of California. He paid his fine of $25 and served one day in jail. Attorneys interested can secure data of the above cases by writing to the clerk of courts in either of the above-named cities.

The decision of the supreme court of California has established the fact that the passage of anti-spitting laws is a proper exercise of police power of the city. The entire Board of Health of San Francisco is composed of physicians, which probably accounts for the efficient work recently accomplished.

Men without scientific training or special fitness are frequently placed—by corrupt politicians—in charge of bureaus of health. The annual reports of these men often read like the minutes of a mutual admiration society, and their work is about as valuable. These reports and the inefficient work are sufficient evidence of the need of placing a medical executive board over all bureaus of health.

Public opinion is being rapidly educated, and if bureaus of health are inefficient, and anti-spitting laws are not well enforced in the near future, the question of first and second class electric and steam railway cars, to separate clean from indifferent people, will probably demand consideration, even in this democratic land. If rapid-transit street-car companies do not give this factor of car sanitation the attention it deserves, private motor carriages will crowd the streets, and this will delay and lessen street-car travel.

All communities have a few so-called scientific men, a few men in power, a few car conductors, a few "don't cares," who would rather wallow in public expectoration than set an example of cleanliness to the general public. There are also a few persons who consider it their sacred duty to clog the wheels of preventive medicine by opposing every useful reform and wailing over every offensive and dangerous institution as it falls.

Much has been done toward educating teachable peo-

ple. The work is well begun. The pessimists of a few years ago are the astonished optimists of to-day. Thousands of earnest workers are now in the field where not a corporal's guard stood when the writer began agitating this factor of public health five years ago.

HEREDITARY FACTORS IN TUBERCULOSIS.*

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The hereditary factors are regarded as being less influential at the present day than was held prior to Koch's important discovery of the tubercle bacillus. It has been conclusively shown that direct hereditary transmission is an exceptional occurrence. Hauser, in an extensive and careful review of all previous work upon this question, reached the conclusion that there are only 18 authentic instances of direct inheritance of this disease to be found in the literature. In all of these cases only the mother had tuberculosis. He contends that conclusive proof of direct transmision from the father is wanting and this position is probably the correct one. Hauser attempted to produce experimental direct hereditary transmision in guinea-pigs and rabbits, and in a single animal only was he successful, and this had been kept alive for months after birth. He decided that the theory of direct inheritance rests on insufficient evidence.

Birch Hirschfeld found that even though the fetus itself may show no evidence of tuberculosis, the fetal viscera may yet be infective to guinea-pigs. Baumgarten also believes that the contagion may be transmitted and become pathogenic at a variable period after birth. To support this view is the fact that certain structures not apt to be accidentally infected are commonly the seat of tuberculous lesions in children, as the bones and joints. Kuss disputes the theory of latency of tubercle bacilli until childhood or later in life. He contends that these latent foci do not exist before the age of three months; and that they are rare before the end of the first year of life.

Whilst it must be conceded that intrauterine infection is the exception, and although there is practically no hereditary tuberculosis there is a hereditary predisposition, which invites infection. In what does this predisposition consist? This is a pertinent question. Otis, of Boston, contends that heredity means poor vitality from birth and that subjects who manifest the same conditions without the influence of heredity are to a like extent predisposed.

It is well known that as the result of an unfavorable environment a predisposition to tuberculosis may be acquired. Hence, there is danger of confounding this condition of the system with inherited predisposition. Again, the latter form of predisposition is constantly being confounded with latent forms of tuberculosis, whether acquired or inherited. Although there is no harmonious agreement concerning its use and value, I feel convinced that we possess in tuberculin an agent by means of which existing latent tuberculosis can be reliably discriminated from mere predisposition. The question of dosage is vitally important. I have a fixed belief that greater uniformity of results of Koch's method would follow, if medium-sized initial doses—from 2 to 5 milligrams—were employed. As elsewhere stated, this would obviate the necessity of repeated injection, as is generally the case when small commencing doses—from half a milligram to a milligram—are used. Accurate results in most reactive cases could be expected, and an increased dose, if the repetition were actually demanded, would be unattended by any risk for the patient.

But even after eliminating in this manner, latent and obscure forms of tuberculosis, I know of no way in which to estimate with precision the percentage of cases in which the predisposition is inherited. That the proportion of cases is smaller than had been held prior to the important discovery of the bacillus tuberculosis is unquestionably true. On the other hand, my personal experience and observation is entirely confirmatory of the fact that individuals belonging to a family in which tuberculosis is distinctly traceable are more prone to the disease than similar constitutions or persons who have no tuberculous family history. This is even more true of the cases of phthisis that occur in individuals possessing a robust build. Indeed, I fear that in consequence of the modification of professional opinion in recent times relative to the question of heredity, there is danger that too little attention is now and will be in future given to the question of family history. In support of this position, I may be allowed to quote Allbutt, who forcibly remarks, "every physician engaged in practice among the classes in which family history can be acquired is morally convinced of the bias of many families to tuberculosis, however their circumstances may appear; a bias often revealed at the attainment of a certain age." Dock and Chadbourne in a statistical study of this subject also conclude that multiple appearance is commoner in families with tuberculous parents.

After making due allowances for all modifying circumstances, particularly accidental infection, including especially infected homes and prolonged contact with tuberculous subjects, I entertain no doubt that a predisposition to this affection may be inherited, and this tendency is more unfailingly transmitted through the mother than the father. It is analogous to the heightened receptivity or susceptibility that is observed throughout successive generations in certain families, to typhoid fever or acute articular rheumatism. Finally, this increased susceptibility, which we note in a limited number of families, is dependent on a lack of resistance of the animal-cell and the latter condition in turn on a faulty metabolism or nutrition.

* Presented in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

TUBERCULOSIS AND INSURANCE.*

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This subject, in order to be thoroughly discussed, must be considered from two standpoints, which are almost diametrically opposed to each other and which can, therefore, hardly be treated fairly by one individual. The two sides of the case relate to the business and the benevolent features. From my standpoint as a holder of several policies in mutual companies, I am necessarily more interested in the business aspect. Although I highly appreciate the benefits that might follow to many widows and orphans from a benevolent, or perhaps I might say a charitable, management of these great trusts, nevertheless, we must all admit the wisdom of the rule, "never mix business and charity." I take it therefore that what is for the best interests of the company itself, and for the best interests of the thousands

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who are insured in mutual companies, is really what will be the greatest good to the greatest number.

Statistics from the mortuary tables of several of the largest companies in this country show that fifty years ago over 20 per cent. of the deaths were the result of tuberculosis. Until Koch's discovery very few cases besides those of pulmonary consumption were recognized as tuberculous diseases; therefore, it seems probable that nearly half the deaths of persons insured fifty years ago were from tuberculosis; but whatever the number may have been, business methods certainly require exercise of the greatest care to exclude undesirable risks.

I have been told by officials of life insurance companies that medical examinations appear to reduce their death-rates only during the first six years of the life of policies; but a large percentage of policies lapse or are surrendered during the first six years. These facts emphasize the necessity for the most thorough medical examinations if an insurance company is to do a safe business. The points which appear of greatest importance in this examination and to which the examiner should give greatest attention are:

1. Weight, which in a general way determines the state of the nutritive functions better than anything else. The abnormally light body in a large percentage of cases is the one that will sooner or later become tubercular.

2. Poor digestion. This often causes the light weight and indicates feeble resisting power, which makes the individual peculiarly vulnerable to tuberculosis. In many these two symptoms indicate that the tuberculous process is already established.

3. Pulse. Although there are many healthy persons in whom the pulse is easily accelerated and although it is above 80, while standing, in the majority of men brought in for life insurance examination, yet a persistently fast pulse of 100 to 120 must be looked on as one of the most frequent symptoms of tuberculosis.

4. Frequent attacks of bronchitis. It appears to me very doubtful or even improbable that catarrhal bronchitis often leads to pulmonary tuberculosis, yet if we accept the statements of applicants we must not forget that these so-called attacks are often only exacerbations of the symptoms of pulmonary tuberculosis.

5. Frequent pneumonia. Repeated attacks of pneumonia must leave the lung in a crippled condition, which, other things being equal, would favor the development of pulmonary tuberculosis; yet recovery from pneumonia may in some instances be considered a most favorable prognostic, indicating that the individual is immune to tuberculosis.

6. Repeated attacks of pleurisy appear to be usually of tuberculous origin.

7. Heredity. It is a rule with some of the best companies to reject all risks where a parent and one brother or sister have died of consumption, unless the applicant has passed the age of 35. I believe this a prudent precaution, essential to the welfare of all policy holders in mutual companies. In recent years many physicians of large experience have come to doubt the importance of this factor, and it has not been difficult to find statistics to support their contention, because in nearly all statistics the most important factor is ignored or can not be found. The missing factor is: How many cases would have occurred without hereditary predisposition?

The fact that the Brompton Hospital reports show that one parent has had phthisis in nearly 25 per cent. of the cases of consumption does not by any means show that neither parent has suffered from phthisis in the other 75 per cent., nor yet that there would not have been an equal number of deaths from this disease if neither parent had suffered from it. The same may be said of Fuller's statistics, which show that when parents, grandparents and uncles and aunts are considered, 59.5 per cent. of the antecedents have had pulmonary tuberculosis. Williams' figures show that out of 484 cases of phthisis in which some of the relations had died of the disease, in 224, or over 46 per cent., the relationship was that of brother or sister. If these could be added to the above figures, probably not far from 80 per cent. of all cases would show hereditary predisposition, which is the whole percentage of the human race that are now believed to have tuberculosis at one time or another in some form.

When we take into consideration the missing factor we must admit that even these overwhelming figures prove nothing; and in fairness we must allow for common environment and contagion, the first of which might explain in some cases the occurrence of two or more cases of consumption in one family. Osler states that in 427 cases in the Johns Hopkins Hospital, 25, or nearly 6 per cent., occurred in married people where the husband and wife had suffered from the same disease. This is grasped by some as proof of contagion, but there is no accompanying proof that the relatives of these persons did not have tuberculosis in some form.

Direct transmission of the bacilli from mother to offspring has now been proved in several cases, though this must be very infrequent. Every one is familiar with the marvelous influence of heredity in perpetuating mental as well as physical peculiarities, or predisposition or immunity to some other disease, such as croup, measles, scarlet fever, smallpox, etc., numerous interesting examples of which might be given; then why should we question the transmission of that peculiarity which renders some susceptible to tuberculosis and enables others to withstand all the attacks of the bacilli and their toxins?

The records of the Paris morgue and several laboratory observations have shown that in healthy bodies, of those dying from accident, suicide or acute disease, tubercle bacilli may be found in a large percentage; or scars from previous tubercular foci are present. In 125 autopsies in the Foundlings' Hospital of New York, tubercle bacilli were found in the bronchial glands in every case. These various facts render it probable that all of us harbor the tubercle bacilli at some time, but if we inherit strong constitutions and avoid vicious environment we need not die of tuberculosis.

As examples of hereditary influence that can not be explained by the theory of contagion or similar environment, I may briefly mention two families among by personal friends. In a family with 12 adult brothers and sisters, the father had light eyes and the mother, who died of consumption, had dark eyes; three of the dark-eyed children, after they had left the parental roof and had homes of their own, died of pulmonary tuberculosis, though not subject to contagion and although living under entirely different environment. Another dark-eyed sister lost two dark-eyed children after they were grown, though her light-eyed son, who was constantly with his brother and sister, escaped. In the other family, the father when a young man suffered from consumption but recovered. His four children after arriving at adult life died of consumption, though under very different environment.

8. Hemoptysis. Cases of hemoptysis without other evidence of tuberculosis, or at least cases of hemoptysis

that have not been followed by recognizable tuberculosis, are fairly numerous, yet those who have had much to do with pulmonary consumption must admit that in the great majority of cases hemorrhage from the lungs or air-passages result from this cause; therefore, the rule that no applicant for insurance who has had hemoptysis should be accepted, until ten years have elapsed after the last hemorrhage, seems strictly just from a business standpoint.

9. Temperature. Daily elevation of temperature of from 2 to 3 F. is a very frequent sign of tuberculosis, but we must not forget that a daily elevation of 1 to 1½ F., sometimes extending over several months, is common under a great variety of conditions, which are not followed by any evidence of tuberculosis, as, for example, in simple catarrhal inflammation.

10. Physical signs of loss of elasticity, or pulmonary consolidation. It seems needless to emphasize the importance of rigid examinations under favorable surroundings, and this necessity ought to impress on the companies the paramount importance of having applicants examined at the examiner's office, instead of elsewhere. Considering the great importance of careful selection, I am surprised that some companies, from false ideas of economy, pay fees that are wholly inadequate for competent and careful service. No matter how well disposed an examiner may be, he will not give any considerable part of his services in these cases gratuitously, and the company will obtain from him only the amount of skill and care that it pays for. Statistics from one of the large companies show that, by careful selection on the lines I have just enumerated, it has progressively reduced its death-rate from consumption from 20.8 per cent. in a thousand 50 years ago, to 5.5 per cent. in the last five thousand deaths among its insured.

Recurring to the question: Are there any conditions under which the tuberculous may be insured, with any kind of policy and at practicable rates? I may answer that most companies accept certain risks that are in all probability tuberculous, providing the heredity, the previous history, and the environment make it appear probable that the individual will live long enough to pay the cost of the particular kind of policy that is issued. These policies must be credited partly to benevolence, though with the safe company the business interest demands very good judgment and a high premium in such cases. There are many more cases that might be safely accepted for limited periods; but the insurance company must always estimate the possibility of error or undue sympathy on the part of the examiner; therefore, it can not take any chances. There are also certain companies that make a specialty of extra hazardous risks at proportionate premiums. These policies are sometimes most benefieent, but usually the rates are prohibitory.

UNITED STATES GENERAL HOSPITAL FOR TUBERCLOSIS AT FORT BAYARD, N. M.*

MAJ. D. M. APPEL, SURGEON, U. S. A.

An order issued by the War Department, August 28, 1899, authorized the surgeon-general to establish a general hospital at Fort Bayard, N. M., as a sanitarium for the treatment of officers and enlisted men of the army suffering from pulmonary tuberculosis, and also to provide therein for the care and treatment of discharged soldiers entitled to the benefits of the U. S. Soldiers' Home, at Washington, D. C. Under the latter clause patients are enabled to remain under treatment indefinitely, even after their discharge from the army by reason of their physical disability or from expiration of their term of enlistment.

Fort Bayard was selected by the surgeon-general not only for its admirably suited climate but also because it was immediately available, its abandonment as a military post having been contemplated for some years, and, excepting for its isolation and difficulty of access, no better locality could have been chosen.

It is located in the arid mountainous region of Southern New Mexico, three miles from Bayard Station and ten miles from Silver City, both of which are on branches of the Santa Fé R. R. Having an altitude of 6040 feet, the climate permits of comfortable outdoor life during the entire year, and, excepting for the frequent high winds during the spring, is undoubtedly ideal.

When ordered to assume charge of the hospital I was directed to select and ship supplies as promptly as possible, to provide acommodations at once for a number of cases to be immediately transferred from the Soldiers' Home.

On my arrival, October 3, 1899, I found all the buildings, as well as the water and sewer systems, very much dilapidated, and extensive repairs and alterations, which were commenced at once, are still in progress.

The old post-hospital is now occupied as an infirmary for bedridden cases, including not only those in whom the disease is far advanced, but also the febrile cases, which are kept absolutely at rest until the subsidence of the fever.

The ambulant cases are obliged to remain outdoors at least eight hours daily during the entire year; they are not allowed to occupy their dormitories from 8 a.m. until 8 p.m., and the windows of the dormitories are always open. For those with severe cough, rooms with two beds are provided; the others are placed in rooms containing six and twelve beds and the convalescents are separated from those who still expectorate tubercle bacilli. All the patients are required to carry paper spit-cups, which must not be used longer than twenty-four hours and are then burned, and the orders against expectorating elsewhere are rigidly enforced. The alvine discharges of infirmary cases with intestinal tuberculosis are destroyed in a crematory.

Recognizing that the problem in the treatment of tuberculosis is essentially one of nutrition, no efforts are spared to provide abundant good and nutritious food. All the patients are weighed weekly, and the comparative report of such weights is regarded as an index of their general progress.

From Oct. 4, till Aug. 6, 1900, 165 patients were admitted, with results as follows:

	Discharged.	Remaining.
Not improved	14	21
Improved	20	54
Convalescent	11	26
Cured	4	1
	49	102
Died	14	

Cases are recorded as *cured,* when, after all symptoms have disappeared, they fail to react to the tuberculin test. Those in whom no tubercle bacilli are found after repeated examinations and all active symptoms have disappeared, but they still react to the tuberculin test, are classed as *convalescent.*

Though we have not yet completed our first year, our experience thus far tends to disprove the general opinion

* Presented in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

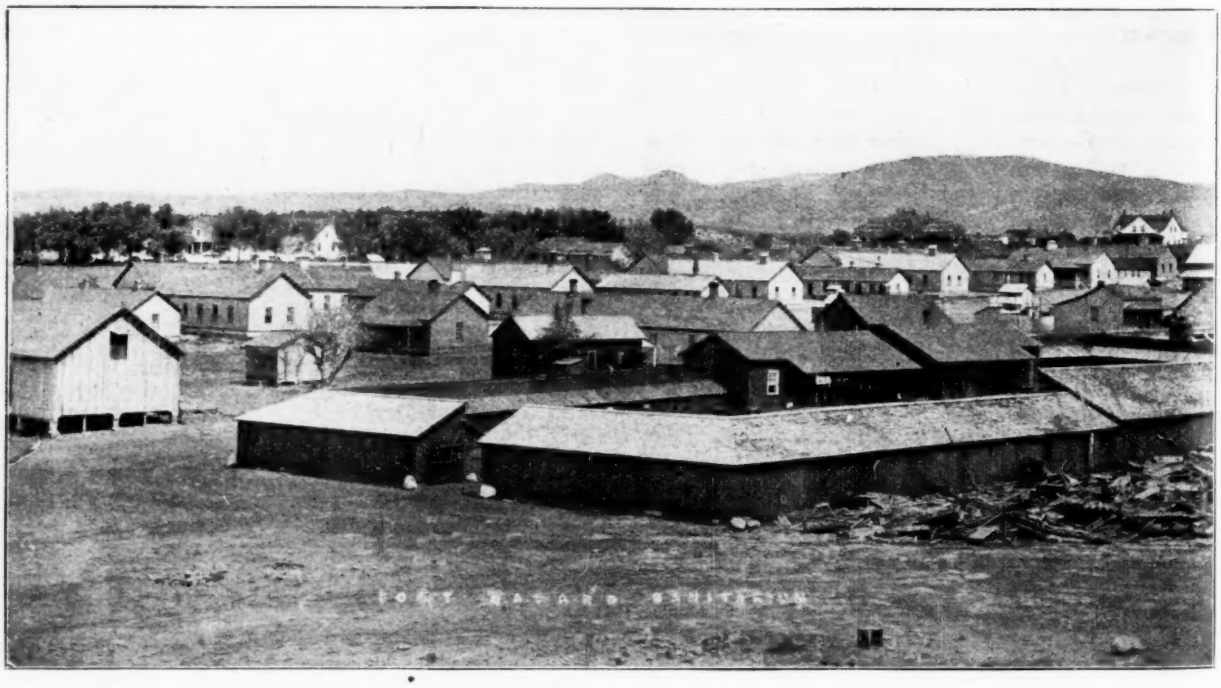
that altitude is contraindicated in laryngeal and hemorrhagic cases. In several cases admitted with laryngeal ulceration, the ulcers have healed, and in two cases who succumbed to their pulmonary involvement, and who on admission had extensive laryngeal disease, the larynx was found, post-mortem, completely cicatrized.

In quite a number of cases with a history of pulmonary hemorrhage before admission there has been no recurrence and in none has it been a serious feature.

Hectic fever is exceptional and usually subsides after a few weeks of complete rest. Night sweats are infrequent, and even in most advanced cases are readily controlled.

Many of those discharged "improved" and "convalescent" were no longer able to resist the pangs of nostalgia so prone to occur among the uneducated—which includes a majority of our cases—and which here is a result of the isolated location of the hospital and enhanced by the aridity of the vicinity. Others when discharged from the army are unwilling longer to submit to the necessary restrictions of the rules and regulations of an institution of this kind.

The majority of those discharged "unimproved" were advanced cases who preferred to return to their friends when told there was no reasonable hope of recovery.



The staff of the hospital consists of Acting Asst.-Surgeon James H. Hepburn and Acting Asst.-Surgeon E. S. Bullock, pathologist; Chaplain S. N. Pilchard, and Capt. H. McL. Powell, 14th Infantry, quartermaster and commissary.

There at present on duty seven female nurses, two of whom are employed as dietists, one hospital steward, two acting stewards, and sixteen privates of the hospital corps. In addition, a number of civilians are employed as cooks, baker, dairyman, watchman, teamsters and laborers.

I trust that after the hospital has been in existence for a sufficient length of time it will furnish interesting and perhaps instructive results.

THE ADVANTAGES OF THE SANITARIUM TREATMENT OF TUBERCULOSIS WHEN CHANGE OF CLIMATE IS NOT POSSIBLE.*

E. S. OLIVER (Johns Hopkins.)

SARANAC LAKE, N. Y.

The writer has for two years past been living at Saranac Lake, N. Y., as a patient and physician, studying the problem of tuberculosis in his own person, in the Saranac laboratory for the study of tuberculosis, and as a member of the staff of the Adirondack Cottage Sanitarium. The views he is about to express are the results of two years' study and observation, and are to be regarded solely as the expression of his own opinion and not in any sense to represent officially the institution with which he is connected.

As may be inferred from the title, it is accepted as a foregone conclusion that sanitarium treatment is the only solution of the many problems presented in this protean disease. The conclusion reached by the Berlin Congress and International Medical Congress in Paris leaves no room to doubt that the sanitarium treatment accomplishes what no "specific"—whether serums or drugs—can alone accomplish, and is capable of achieving, unassisted, all the beneficial results that can be claimed for either serum or drugs. Let us examine for a moment what may be regarded as the essential principle of the sanitarium treatment. First, unquestionably, comes the giving up of former habits of life, and the change from the old surroundings combined with the change to a more favorable climate. We, in Saranac Lake, are convinced that there is much of healing in the climate alone, and those of us who have suffered personally from the asthmatic breathing that so affects the tuberculous patient can testify to the vast difference in the quality of the air in the Adirondacks, as compared with that at our homes, and many of us go so far as to detect fine shades of difference between the air at Paul Smith's, that at Lake Placid—nay, even that at the Sanitarium, as compared with that at the village one mile away and 300 feet lower. We may as well admit that there is nothing essential in the altitude to which the patient resorts. The isolation of the patient from his family and community is of the utmost importance in combating the spread of disease. On the other hand, the segregation of persons more or less affected with the disease, especially of those in the same stage of progression, does away with the sensation of being an object of repulsion and danger—of being an outcast—which overwhelms the modern leper so long as he is in the company of sound and healthy individuals. This association with other patients supplies to him the social intercourse for which he longs in his enforced isolation and serves to combat homesickness, the pangs of which lead many hopeful cases to throw away their chance of recovery—for the mere sake of seeing familiar faces and hearing familiar voices. The sanitary precautions insisted on in the Sanitarium completely removes the danger of further infection and makes association with those recognizedly consumptive fraught with less risk than the average individual encounters in the street cars and stores which are the scenes of his daily labors. Moreover, the education which the sanitarium imparts as to the dangers of carelessness in disposing of the sputum is full of object lessons in themselves sufficiently valuable to justify the maintenance of such institutions. But it is the regulated out-of-door life amidst hygienic surroundings, with diet selected according to the individual's needs as carefully as his medicines are prescribed for his symptoms, and in the application of the best tried and most rational methods of medical treatment, that we find the vital essence of the sanitarium treatment.

The question of exercise is one on which Dr. E. L. Trudeau takes perhaps the most advanced position of all those who have successfully treated tuberculosis by the hygienic method. Exercise further than that necessary to go and return three times a day from the patient's cottage to the central dining hall is forbidden in the Adirondack Sanitarium to all those patients who reach a maximum temperature daily of 99.4 F. (37.5 C.). In cases maintaining for a considerable period a

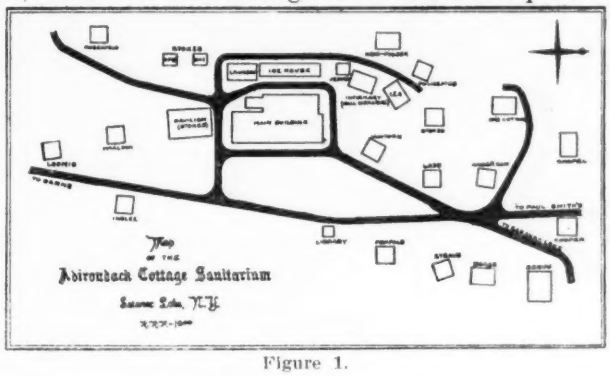


Figure 1.

temperature of 100.5 F. all exercise is forbidden, and the patient remains at his cottage, lying in his cot on the veranda, where his meals are served by an orderly, from a diet selected according to the prescription of the physician in charge.

RESULTS OF SANITARIUM TREATMENT.

To an observer who has studied tuberculosis in the wards of the public hospitals and sees for the first time the patients in the Adirondack Sanitarium, the first impression is one of absolute skepticism that these people, who present all the features of robust health, can be suffering from the dread destroyer with which he became familiar in his student days. The visitor finds that he is almost the only one on the grounds who coughs. He is conscious that he looks anemic and emaciated by the side of the consumptive, and he is apt to hurry away lest some other visitor will take him for the consumptive; nor is he unwilling after his visit to believe that of all patients, including those entering the sanitarium in all stages of the disease and remaining at least nine months under treatment, 34.5 per cent. go away apparently cured, while of those actually in the incipient stage 73.4 per cent. are apparently cured.[1] Not only the apparently cured, but many of those in

* Presented in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

1. Vide the excellent paper entitled: The Result of Sanatoria and Social Hospital Treatment ip Pulmonary Tuberculosis, by H. McL. Kinghorn, M.D., Saranac Lake, printetd in the Montreal Medical Journal, July, 1899.

whom the disease is merely "arrested," have been able to return to their vocations and live a practically normal life for a period ranging from one to fifteen years. To give a concrete idea of the results from our practical everyday experience among the Sanitarium patients, let me cite the instance of two patients whom I have just encountered on the street and asked for the record of their weights.

W. H. B. entered Sanitarium June 30, weighing 134 pounds; July 7, weighed 139 pounds; July 14, weighed 146 pounds; July 21, weighed, 149 pounds; July 28, weighed 153 pounds; August 11, weighed 158 pounds; August 18, weighed 161 pounds; August 25, weighed 164½ pounds.

H. P. D. entered the Sanitarium June 23, weighing 130 pounds; July 14, weighed 138 pounds; July 28, weighed 146 pounds; August 11, weighed 151 pounds; August 25, weighed 154 pounds.

A study of the official weight-book will show a score of such phenomenal gains in weights.

The accompanying charts taken at random furnish the most convincing evidence that pyrexia can most successfully be treated simply by the rigid observance of rest and outdoor life.

Cough as a symptom has much more significance for the patient than for the physician. I have repeatedly seen patients enter the sanitarium with a cough that

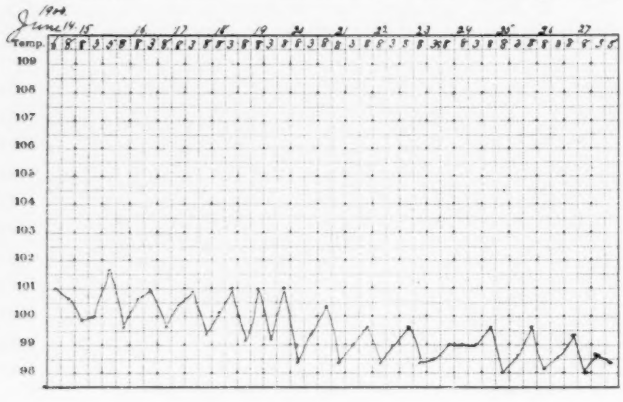


Figure 2.

kept them in paroxysms night and day, who could not walk from their cottage to the dining hall without pausing three times to expectorate in the receptacles provided on the ground. I have seen them lose their cough in a week or ten days, save for a single more or less violent paroxysm on retiring and on rising, and have heard them report the expectoration diminished in three weeks from three or four ounces on admission to half an ounce daily, when they were subjected to no treatment other than the hygienic routine of outdoor life in all sorts of weather.

The amount of food consumed at table three times daily by the patients, and between meals when so prescribed, is such as would surprise the hardest-working day-laborer of your acquaintance and give you reason to fear that some acute dilatation of the stomach must inevitably follow, until you had become accustomed to the appetite whetted by the tonic breezes of the Adirondack region.

As Dr. Trudeau has shown in the all too few articles he has written for the instruction of the profession, the early diagnosis is the cardinal factor in the cure of the disease, and not alone in the cure, but in the sanitary prevention of its extension. Early diagnosis becomes thus the keystone in the arch on which we are to build the structure of our barrier against the "white plague."

The average family practitioner recognizes the disease only when the symptoms are so prominent and the physical signs so unmistakable that the patient is already too far gone to stay his downward course.

The plan I propose is that where a general practitioner, or a specialist in pulmonary disease, has under observation and advice two or more cases really incipient, he should have sent them to a cottage, rented or built for the purpose, in some favorable situation in the suburbs of his city or town, say ten miles from its limits, where the air is uncontaminated by dust or smoke and the surroundings rural and attractive; a trained nurse should put the patients through, under the physician's close supervision, the regular sanitarium life as it is pursued in the Adirondack Cottage Sanitarium and the Muskoka Sanitarium on this continent, and in similar institutions in Europe, notably in Brehmer's Sanitarium at Gerbersdorf, in Detweiler's at Falkenstein, and in Walther's at Nordrach.

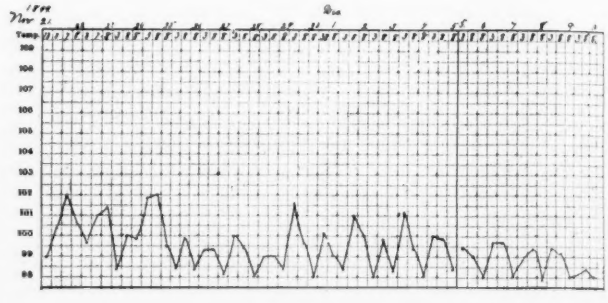


Figure 3.

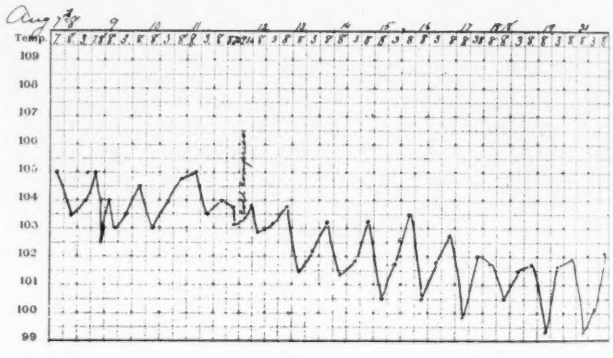


Figure 4.

In choosing a site for the miniature sanitarium, let a slight elevation be selected for the cottage, the exposure of the main verandas and bedrooms for patients to be on the south. The chosen location should be far removed from the din and bustle of the town, but near enough to some railway or tramway to give to the patient's family and business associates the opportunity of calling on him at such times as may be prescribed by the physician. If the roads in the neighborhood are suitable for driving, great pleasure and a considerable aid in the treatment is provided for. Of how little real moment the change of climate is, provided a rigid sanitarium treatment is pursued, is shown by the cures achieved in the Hôpital Boncecaut, located within gunshot of the fortifications surrounding Paris. Often a cottage may be found already built which may be adapted to the treatment proposed, but probably it will in most instances be found advisable to build a structure especially contrived to meet the needs of so unique a routine of daily life.

I append to this paper plans for such a building, drawn by a competent architect, Mr. W. H. Scopes, of

Saranac Lake, which will be found to embrace all the essential features of the sanitarium on the "cottage plan" rendered famous by Dr. Trudeau's work. It provides for a cellar, with plants for hot water, heat, coal-bins, pantries, and water closet for servants. The first floor (Fig. 7) offers a general sitting-room, dining-room, kitchen, bathroom with all the necessary appliances, two bedrooms, the nurse's bedroom and her office and consulting-room. Open fireplaces are provided, both for the sake of ventilation and for their cheerfulness.

The second-floor plan (Fig. 8) shows a scheme for four additional bedrooms for patients, and in the third floor, as shown by the side elevation, are rooms for the cook and chambermaid (Fig. 9).

The covered veranda around the southern and western sides on the first floor, and the open veranda on the second-floor, offer the best possible opportunities for that life of repose in the open air which is the essential

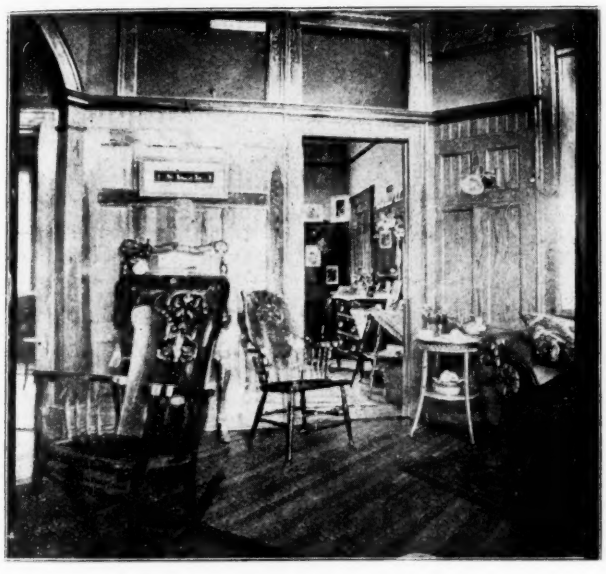


Figure 5.

point in the treatment, according to the open air plan. Lounges, reclining chairs, hammocks or camp beds are furnished to suit the tastes of the patients. The rooms should be wainscoated to a height of six feet and finished in plaster, and "moresco" for the rest of the walls and ceiling. The floors are best made of hardwood, oiled and polished, or else covered with linoleum, with a rug or two of some washable stuff. Electric light is the only form of artificial lighting permissible. The windows should be of ample size, and of the fashion that permits them to be raised and lowered, and in the same frame revolved on an axis, all of which movements are accomplished by the device known as Bolles' patent. The same revolving principle should be applied to the transoms, which occupy the upper three feet of the wall separating the two first-floor bedrooms from the central sitting-room. This scheme of ventilation permits the air to be changed constantly through the night, so that the same air is never breathed twice while the patient occupies the room, and it continues the fresh-air treatment even throughout the time the patient spends indoors—a most important consideration. No draperies or carpets are to be permitted except a small rug in the sitting-room. The sitting-room can be as handsomely furnished as may be desired. How homelike and cheerful such quarters can be made, even when complying with the sanitary requirements mentioned, may be judged from Figs. 5, 10 and 11, which are amateur photographs of the sitting-rooms and bedrooms in several of the Adirondack Cottages. The daily routine of life must be ordered according to the precepts of experience.

I present the daily program of a patient in the Adirondack Cottage Sanitarium:

7:00 a. m., temperature taken while patient is in bed.

7:30, patient rises; sponge bath—cold or tepid.

8:00, breakfast.

8:30, patient reports at pharmacy or physician's office; while waiting can write letter and send it off in the 9:30 mail.

9:30, a stroll if permitted to exercise; or a drive, if not.

10:30, a glass of milk or an egg, or both; reads, studies or works unti 12 m.

12 to 1, rest in a hammock or on a couch in the open air until dinner.

Dinner. After dinner, rest until 3:30, temperature taken and then extra nourishment given.

3:30, milk or egg, or both.

3:30 to 5:30, patient reads, studies, works, strolls or drives, according to strength and the doctor's advice.

5:30 to 6, patient lies in the hammock or on a couch in the open air.

Figure 6.

6:00, supper.

6:30, patient reports, if necessary, at the physician's office; sits or lies on veranda, or attends some form of amusement provided in the parlor or pavilion.

8:00, temperature taken.

9:00, extra nourishment, milk or egg, and retires.

Letter-writing is limited to the bare necessities of correspondence and is done only in the morning hours.

All forms of mental and physical exertion are forbidden so long as there is active disease, with elevation of temperature above 99.4 F., or other constitutional symptoms. The reading is selected to divert the patient's mind from his afflictions to more cheerful topics, and games are allowed, provided they do not involve any harmful exertion of mind or body. The social life in the Adirondack Cottage Sanitarium is a feature which strikes every visitor as unique. Knopf remarks especially on the gay spirit which prevailed when he visited the Sanitarium in 1896.

The food provided at the Adirondack Cottages is selected by the superintendent, Mrs. Julia A. Miller, from a long experience in such work. For breakfast: fruit, oatmeal, wheatena, "Pettijohn," beefsteak, lamb chops, bacon, eggs cooked in a great variety of ways—soft-boiled, scrambled, fried, poached, made into omelettes, etc.—brown bread, wheat bread, corn bread, muffins,

griddle cakes, etc. For dinner: a simple but appetizing soup, fish, roast or boiled beef, roast lamb, fowls prepared in various ways, cornbeef, vegetables, cabbage, tomatoes, potatoes cooked in an infinite variety of ways, beets, peas, beans, rice, lettuce, squash, asparagus; for desserts, ice cream, nuts, pies, puddings, custards, jellies, fruits. For supper: one hot meat, cold meats, white

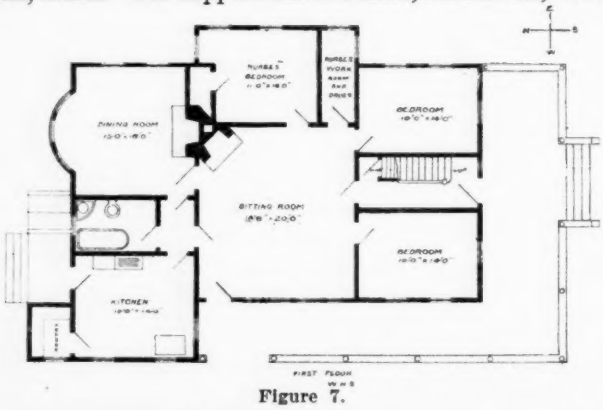


Figure 7.

and brown bread, toast, some hot cereal food, baked beans, potatoes, eggs, preserved fruits, jellies, jams. Milk is furnished at the table at every meal, and is provided for each patient to take with him to his cottage for the between-meal nourishments.

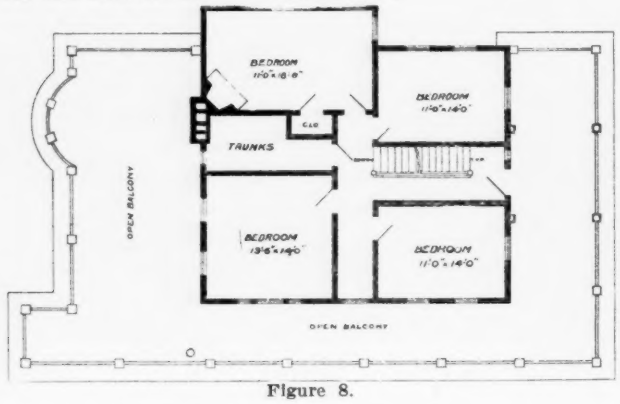


Figure 8.

With the special symptoms that present themselves for treatment, I do not purpose dealing at this time. Suffice it to say that they are all treated with as little resort to drugs and from the most common-sense point of view that can well be imagined. Dr. Trudeau

Figure 9.

and his assistants practice medicine not by rule of thumb, but according to the dictates of a large experience, based upon a profound knowledge of the broad principles underlying all disease and its treatment.

Let me point out briefly what are the chief advantages of the plan proposed, 1, to the physician; 2, to the patient; 3, to the nurse; 4, to the family of the patient and to the community in which he has been infected.

The physician is enabled to keep his patient under his own supervision instead of intrusting him to a stranger. His patient remains a source of revenue to him, instead of dropping out of his practice, a consideration which has more or less force for every family practitioner. He is guaranteed by the presence of a trained nurse that each of his patients will get the best treatment possible, and that every rule laid down will be rigidly followed. This can not be said for any scheme which leaves the patient in the hands of his family. The family physician, moreover, gets the credit for the recoveries, which his early diagnosis, watchful interest and skill as a therapist have brought about. This contributes to his influence and future usefulness in the community and puts on him the necessity of keeping himself familiar with all the practical details of sanitarium treatment by which the best results can be obtained.

The trained nurse is freed from all those trammels which hamper her when she is trying to carry out the instructions of the physician in the face of the preju-

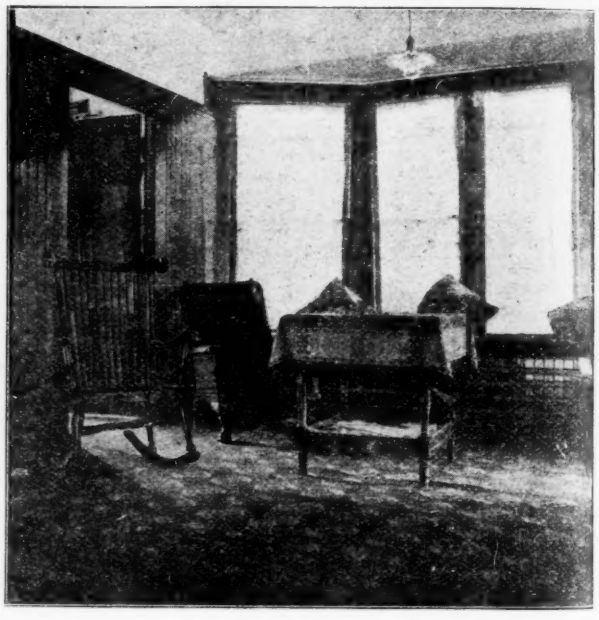


Figure 10.

dices and sympathies of the patient's family. Those under her care are placed in the situations most convenient for her manipulation, and the plans presented enable her to move a patient from any room, through a window cut down to the floor, out to the veranda, thus saving strength and facilitating work. The plan provides for the easy enforcement of every sanitary regulation, preserving the nurse and the fellow-patients from risk of infection. She, with the physician, has the most favorable conditions for herself and her patients. She shares in the just credit due for their recovery and wins that repute as a successful practitioner of her profession which is as dear to the nurse's as to the physician's heart. The patient reaps every advantage that could be gained at the expense of a long trip to some health resort, a trip which, in his weakened condition, may prove most unfavorable to his prospect of recovery.

The sufferer is under the daily supervision of the man he trusts most in the world, not of a busy stranger, whose few interviews with him are at best brief and con-

fined to professional detail. He is attended by a careful nurse, who gives him every care that her varied experience can dictate. He has gained everything, and practically lost nothing, by undertaking the course of treatment.

The patient's family and community are saved the danger of infection, are given an object-lesson of incalculable value in the curability of tuberculosis and in the sanitary precautions which are effectual in preventing its spread. They have preserved to them the presence and influence among them of one who is a bearer of the heavy burdens and responsibilities of family, business and social life—for it is just such leaders among men and pillars of the social structure who are most often seized by the jealous dragon Tuberculosis.

What would be the cost entailed upon each patient who takes advantage of my plan? To completely build and furnish such a home as that shown would, at this period of high prices for lumber, plumbing, fixtures and furniture, cost $6000. The running expenses of the sanitarium must cover at least the interest on this. The

Figure 11.

following estimate for six months, based on actual experience, will represent fairly well the other features:

ESTIMATE FOR SIX MONTHS.

Interest at 6 per cent on $6000	$180
Services of trained nurse at $50 a month	300
Coal for cooking, 6 tons at $6 a ton (12 to 15 tons must be added for heating if the months be winter months)	36
Wood for open fireplaces, 10 cords at $3	30
Electric light, $5 a month	30
Hire of cook and maid, each $15	180
Table supplies, at $100 per month	600
Total for 6 months	$1356
Total for 1 month	226

The plan provides for the accommodation of six patients. Thus the cost to each of the six patients per month is less than $40. That is to say, at a cost of about $40 a month, apart from the physician's fees, an individual can have all the opportunities offered by the sanitarium treatment for the complete cure—in 75 to 90 per cent. of really incipient cases—of pulmonary tuberculosis, without severing the ties binding him to his domestic, business and social life.

The objection has been made by persons with whom I have discussed this plan that, without the shock that comes to a man from the complete breaking off of all his business and social relations, and without the enforced separation from them entailed by a change of climate, few persons really in the incipient stage of the disease can be persuaded to place themselves under a rigid routine of treatment. This does not seem to me a valid objection, for even in those cases which come hundreds of miles to such a resort as Saranac Lake, the ties of home and business life remain practically unbroken, and the sense of anxiety and the worry are just as great, or even greater, than if the patient were nearer home and had daily reports from his family and business associates. And it happens only too frequently here that patients coming from other more or less distant points soon tire of the routine, and are without sufficient will-power to persist in the rigid treatment without the example of fellow-patients and the discipline of a nurse, and after a few weeks or months of futile and desultory effort, or of days and nights spent in saloons or poolrooms, return to their homes discouraged, and before long meet the unfortunate consequences of their ill-advised action.

Every hope of success in this plan, as in every plan for the treatment of tuberculosis, depends on the iron will and the consummate tact of the physician and the nurse

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who have undertaken the task. Both of them will be obliged to study closely and deeply the methods pursued in the most successful sanitaria.

This leads me to a matter which has always been a source of wonder and dismay to me, namely, to find in my two years' stay here how few general practitioners ever come to Saranac Lake—in very truth, the fountain head of the rational theories of treatment in this country—to make a profound personal study of the methods actually in use here. These methods, as I have shown above, are daily offering, even to the untrained eye, the most striking illustrations of what can be done to combat tuberculosis, not merely in its earliest, but also in its middle and even later stages. I can point out any day on the streets of Saranac Lake a dozen—nay, a score—of cases who have come here in the last five or six years, and received the prognosis from even the most optimistic of physicians that death must inevitably ensue in four to six months, but who have in the face of his advice persisted in remaining here, and have been to all practical intents and purposes cured, and are now supporting themselves or their families by their daily exertions.

It is to me of profound significance that the one who hopes most in all these cases, and who is most loth to give up a patient, is Dr. Trudeau himself. He, more than any man in this country, has studied the possibilities of treatment and of cure in every form of pulmonary tuberculosis, and does not hesitate to-day to say that the more cases he sees, the less capable he feels of predicting what cases may recover.

THE SANITARIUM FOR CONSUMPTIVE SAILORS ESTABLISHED BY THE U. S. MARINE-HOSPITAL SERVICE AT FORT STANTON, N. M.*

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There is a prevalent belief that the sailor does not have tuberculosis. Just because he is at sea breathing the purest air, we naturally think of him as having the greatest chance of escaping that dread infection. The public mind loses sight of the fact that the average sailor spends a great part of his life ashore, participating in drunken brawls, gambling in the vile holes underground in New York, San Francisco, Baltimore and all the large maritime commercial centers. The little time he spends in sleep when ashore is in sailors' boarding houses, usually filthy dives. In lieu of beds, there are rough bunks built in like a set of shelves clear up to the ceiling. Into these a little straw is thrown, and this is the bed of one man one night, and another the next, and so on. The straw is rarely, if ever, changed, and this is the only bed these poor fellows can get in these gruesome places. They need no covering, for the room is heated by the red-hot stove, around which some sit and smoke and play and drink the long night through. Such a place is awful to think about, and it is small wonder these men get sick; it is the greater wonder that every man so exposed is not rapidly infected with tuberculosis, for it is only reasonable to believe that all such places become infected in time. Then, too, it is easy to understand that one case may infect an entire crew at sea, on a long voyage, when the men are packed together like animals. The sailor breathes pure air only when he is on watch, but when he "turns in," his sleeping quarters are exceedingly bad—so bad that it is impossible to describe them adequately without subjecting one to the accusation of exaggeration.

We of the Service know that there are hundreds of consumptive sailors and our annual reports show that we have been losing on the average more than one hundred a year. Our experience has also shown us that all the cases that remain, eventually die; they drift in and out of the different hospitals, better to-day and worse to-morrow, and sooner or later serve as a necropsy study.

So it has gone for years. No movement which is purely humanitarian can be brought about without much talk and some sober writing. Officers talked and thought, but unfortunately this is usually what a non-political government officer is compelled to do—take it out in talking or writing, if he is so inclined. It is to the credit of the officers of this Service that they have ever been alert to the prevention, spread and proper control of the disease. The present surgeon-general, Dr. Walter Wyman, was the first in the Service to undertake to bring about the establishment of a sanitarium for consumptive sailors. This was many years ago, when he was a junior officer, and his efforts met with little encouragement, and although unsuccessful he can properly lay claim to being a pioneer. He did not forget his early ambitions after he became surgeon-general, and it fell to his lot to be the instrument to consummate the establishment of a sanitarium for consumptive sailors.

In December, 1898, I was sent on an inspection tour through Arizona and New Mexico for the purpose of recommending a site for the contemplated sanitarium. It was thought that as the Army had been first in the arid region—and of course had selected the most desirable site—abandoned posts would best serve our purpose as fulfilling the requirements of large tracts of land, good water-supplies, and that the data published by the officers of weather and other conditions would be very valuable as a guide.

After careful examination in both territories, Fort Stanton was decided on as best suited for our purposes, specifically and generally. The weather reckonings made by the Army, together with special reports by its officers serving here in early times, showed mild winters with delightfully cool summers. It was necessary to have a station combine these two features or else have two stations, one at a low level for winter and one higher for summer, for otherwise patients at low levels would lose in summer all that had been gained in winter. With its undoubted advantage of climate, a generous water-supply, a large reservation, and with substantial stone buildings, it is an ideal site.

Fort Stanton is situated in Lincoln county, N. M., about six miles from Capitan, the terminus of the El Paso and North Eastern railroad. The elevation is 6126 feet. There are 38 buildings of various sizes, most of them being of native rubble stone. There is room for 200 patients, besides quarters for officers and attendants. Repairs are going on, and new machinery is to be introduced shortly. A modern steam laundry and a one-ton ice plant are now contracted for, and the plans and specifications are being prepared for an electric-light plant and extensive repairs, which will be commenced this fall. All the buildings will be made modern, and the appointments will equal any in the country. The laboratory will be conducted especially in the study of the disease. The apparatus for the purpose is already on the ground and is temporarily set up in an old building awaiting the repairs on the executive building, where there is to be a room set apart for this purpose.

There is a large farm and garden attached to the station. On the farm is being raised all the forage and most of the grain for the horses, milk cows, cattle and chickens. In the garden we have a source of pleasure not often found at such institutions. We have all the fresh vegetables needed and such vegetables as can not be bought in this vicinity.

Our herd of Jersey milk cows supply all the milk used at the station. While speaking of the cows it may be of interest to describe the method of dealing with the milk. We try to have all the patients follow as nearly as possible the method of taking milk described by Dr. Bulkley. To make this a little more perfect, it is necessary that the milk should always have a given percentage of fat, and to obtain this our milk is cooled immediately after milking and run through a separator. The cream will turn out about 20 per cent. (volume), and then this is added to skim milk to make it 20 or 25 or 30 per cent. of cream, as is prescribed by

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the medical officer. In this way there can be no marked variation in the percentage of fat, as there would be on cold, stormy days, or in change of food or other well-known conditions, which cause a cow's milk and fat percentage to vary. We make some butter and buttermilk, and intend to make kumyss and kefir. The patients have increased so fast that we are not altogether prepared for them, as it was the original intention of admitting only twenty the first year.

The reservation is very large and it is the intention to fence it for pasturage and to raise our own sheep and beef cattle. This will be not only a paying operation, but will give us fine meats. Fort Stanton was set aside for a sanitarium by executive order dated April 1, 1899, and the station was officially opened April 27, 1899. To date, there have been 70 patients admitted, 6 of whom have died, 17 have been discharged, 13 improved and 4 apparently recovered. Seven of those discharged improved are still under observation as attendants, of whom all appear to be well except one. This one, however, was a bad case, but is now doing well. Three cases reported as improved are working in the vicinity. One of these had both lungs badly infected, but as he was strong, had no fever and felt well, he obtained employment at the mines near here and is working every day. He reports that he still expectorates, but otherwise is still improving. Another has just gone to work. His trouble originally was a tubercular empyema, for which several ribs were partially resected. The other man is well.

Of the cases remaining we shall probably lose a few, but seven seem to be entirely cured and will be sent back as soon as the hot weather in the East is over. Twenty-one seem to be arrested, though the evidence of the disease still persists. Of those who died, only one was a good case when he came. This man had a small cavity, which apparently began to heal. He began to improve after a time, and would probably have recovered but for contracting tubercular pneumonia on his good side. Of the other cases which died, not one was considered, by the officers of this station, as good subjects for transfer and all died shortly after reaching here.

To get the patients constantly in the open air has been a most vexatious problem. Most of them came here from hospitals which were heated by steam and would have rebelled had they been put in the open air to sleep immediately after arriving. Knowing the sailor as I do, it was necessary that all this be brought about indirectly and gradually, and now they are very enthusiastic for the open air. All sleep with the windows and doors open and in the day they walk about, swing in hammocks here and there under the cottonwood or box-elder, ride the native ponies, which are for their use, or recline in easy chairs or amuse themselves by doing odd jobs. One man bought himself a tent and sleeps out every night.

Fig. 1.—Looking Across Parade Ground, Showing Capitan Mountains to the Northeast. Fort Stanton, New Mexico.

To find means of diversion or amusement has been a hard problem and will continue to be so. While they are running fever or otherwise doing badly, I have no trouble, but just as soon as they begin to get well they become restless for the water again.

In the matter of treatment, dependence has been put in keeping the men constantly in the open air and giving the best of food. However, we have had several cases with severe complications, malaria being the most frequent. Many of the men have come from localities where they had previously contracted malaria and I have several under observation whose blood is full of the organisms. Dyspepsias are exceedingly troublesome and

loss of appetite in some cases hopelessly discouraging, these complications compelling us to give some medicine. Just here it is well to warn those who have not had much experience with heroin to be cautious in its use; the habit is easily contracted.

We have been making some careful observations of the effects of altitude. If mere clinical experience is worth anything at all it leads me to believe that most cases become anemic shortly after coming here. Of course, the blood-count and hemoglobin percentage are increased, but I feel certain, without being able to prove it, that it is not actually true. After a time the proper relative standing of the blood-count and hemoglobin is re-established and the increase is actual, though the readings of the instrument may not show an increase. I have about decided that the blood tests can only be of interest as a guide to each individual's relative condition and progress. Collectively the tests are misleading. We have noticed, too, that the majority of patients lose weight at first, notwithstanding an improvement in appetite and general symptoms. The urea percentage is markedly increased and has continued so with cases under observation.

The method of handling the sputum and preventing infection will be of interest to the general practitioner. There are no half-way measures. The theoretical part is nearly perfect and its execution will be almost so when all the sterilizers are put in place and in operation. I am happy to say that there is no such thing at this station as a spittoon, which demonstrates that a large institution can be run without one. To have a spittoon lowers the standard of effectiveness at once, for no one will deny the dangers of using one. Any method of sterilizing sputum except by incineration or steam heat is not perfect. Any method of collecting sputum by the process of ejecting it from the mouth

Fig. 2.—Group of Buildings Looking North, Showing the High Mesa on the North, Which Affords Protection from the Winds. Fort Stanton, New Mexico.

Fig. 3.—Looking up South Avenue, with Cottonwood Limbs Which Were Set Out This Spring, and Which Are Growing, Showing White Mountain to the Southwest and Mesa to the South. Fort Stanton, New Mexico.

at a distance into the receptacle is unsafe. The receptacle must be brought close to the mouth. The patient must have his own receptacle, for it is disgusting to see the sputum of others. To secure this desirable end we are using sputum-cups and pocket sputum-flasks. Each patient has a flask and cup, but I find that they dislike the cup and nearly all of them want to use the flask only. They carry the flask wherever they go, and use the cup in their rooms. Once a day at a given time every cup and bottle used is carried to the sputum room and there checked off, by an attendant, from a complete list of the patients. It is necessary to keep close watch on each individual, and take note whether he brings his cup and bottle for sterilization, for if we did not he might empty the sputum in the sinks and closets.

Fig. 4.—Showing Officers' Quarters. Fort Stanton, New Mexico.

The cups and flasks are placed in the sterilizers and the temperature maintained at 245 F. for one hour. This heat thoroughly liquefies sputum and makes it easier to cleanse the receptacles. Our large sterilizer is not yet set up, but when it is, all the bed clothing and individual clothing will be sterilized by steam or formaldehyde at regular intervals.

We, as a nation, lead in all matters for the social and political welfare of man; but we have been very strangely conservative in helping him in his sickness, especially in the inner circles of his home, there to combat the ravages of disease which are undoubtedly caused by the greed of owners and keepers of unhygienic tenements, where men, women and children have less care than given domestic animals. The average legislator is exasperatingly narrow in matters pertaining to public health, unless his pocket or the pockets of his constituents are affected. Let a wide and destructive epidemic break out among animals and then how prompt legislation is introduced to suppress it! There is money! It is a crying shame that this country, one of the foremost in all grand evolutionary movements, should have waited till the closing year of this century before joining in the sanitarium movement against the worst foe of mankind. What excuse can there be? None. The results were well known to be good and it was not an experiment. The way had been marked for us by Germany as a leader in this crusade with her first sanitarium in 1859 at Goerbersdorf, or 1854 according to Von Leyden. The impetus given to the sanitarium movement by the patronage of the Kaiser has done much to stimulate still greater effort. Even the life insurance companies of Germany have built sanitariums for their insured. This has been found by the insurance companies to pay, and it is to be hoped that the companies of this country will soon follow their example. The mutual aid companies should, by all means, do something for the many consumptives that they undoubtedly have in their membership. I have heard that the question had been seriously presented to the A. O. U. W., as this order has hundreds of consumptive members.

The philanthropy of our large cities has long done much harm in building large hospitals for this class of patients. Wealthy men and women have subscribed immense sums to erect places where the poor consumptive

could go—and die. Make them comfortable has been the cry. The end was inevitable. A new sense of responsibility is now thrust upon the man or woman with means, for this frightful death percentage must not be. The case must be diagnosticated early, and that is the awful and fearful responsibility of the physician. And look to it, you who make snap diagnoses with the unaided ear through the patient's clothing and who never make thorough chest examinations of women at all; and you who stain one specimen of sputum and finding no bacilli declare the trouble is only bronchitis; or you, the worst offender of all, who withhold from the patient the true nature of his disease, allowing him to go on expectorating at random, spreading the infection broadcast and to the members of his own household! And I say to these, and to the vampire who holds his patients, drugging them to death, finally abandoning them when of the sufferer. Man of wealth! Woman of wealth! Do not put your money in grand edifices in the overcrowded city where your philanthropy only serves to make a doomed consumptive's life comfortable for a few weeks, at most a few months. Go to the woods all about you and put these people where there be a chance for recovery and where they can return to their homes as useful citizens. This much may be hoped for, but even if the patient should die, we will have gained by removing the focus of further infection. This to me is the most important side of the subject.

All grand movements begin first with suggestions, and nothing is ever accomplished except by discouraging set-backs at every turn. Men like Trudeau can not help but look back with pride on their accomplishments under the very great drawbacks they must have had. What a sensation must the founder have had when, in 1884,

Fig. 5.—Patients Ready for a Ride. Fort Stanton, New Mexico.

they are in a dying condition by sending them to health resorts, that the public is awakening to the realization of the danger of delay and in wrath will have none such as you.

The phthisiologist can not make a successful issue of this undertaking without the aid of the conscientious general practitioner. I am told that in Germany every medical man is alive to this question and the most careful examinations are being made to detect the disease in the first stage. Tuberculosis is not such a grave disease if taken in hand early and sent into the pure open air.

Medical men have no money, and if they diagnosticate their cases early, then the public at large, through its wealthy citizens or its municipal, state or governmental authorities, becomes obligated morally as well as socially and economically, to give the patient a chance for his life. It must not be care for the doomed and dying—the reach must be greater and extend out to the home the first little cottage at Saranac Lake came into existence! His was no selfish ambition; what must have been his hopes and fears? He would have been laughed at then if he had gone to Congress or his state with a bill to help erect this same little cottage. His patients were not animals and there was no loss to the pocketbook, therefore no need of legislative help.

The public is awakening to the danger. Towns, cities and states have become aroused, and now that our Government, first through the Marine-Hospital Service, and then very shortly after by the Army, has given its official cognizance of the importance of stamping out the white plague we may expect in the next few years a forward move of which we may be proud . Of course the work done by the government may, in a way, be comparatively small; yet of all the patients admitted were not one to recover, were all to die, still the good done to the community at large is inestimable. So many foci of infection removed from our ships in their world-

encircling courses; from the barracks, camps and hospitals of the Army; from the sailors' boarding houses; from our general hospitals, where we have had such a discouragingly large percentage of deaths; to bring all these patients away from thickly populated centers, where they undoubtedly spread the infection, is an accomplishment itself of no mean importance.

With such opportunities for study afforded by the well-equipped laboratories, the ever-increasing clinical material, it is not too optimistic to feel that we may help to clear away one by one the many obstacles yet confronting the world in effecting immunity and cure.

THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

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This may be a matter of considerable ease, or one of extreme difficulty, depending on the stage of the disease and the nature of the pathologic conditions. Let us first consider its diagnosis at an early stage. Tuberculosis is an infection, and as is the rule with infections, it occasions a rise of temperature even at its incipiency. Except very rarely, when the infection is violent or the disease assumes the acute pneumonic type, the elevation of temperature is slight, and may even escape detection. If the thermometer shows a constant elevation ranging between 99.5 and 100.5 F. it is in a suspected case strongly suggestive of tuberculous infection. The temperature should be registered not merely night and morning, but four or five times daily, as, for instance, at 9, 12, 3, 6, and 9 o'clock.

The pulse is as a rule accelerated and to a rate out of proportion to the temperature. But it should be remembered that an individual who is under examination for suspected tuberculosis is apprehensive, and therefore likely to manifest acceleration of the pulse. Nevertheless, the pulse-rate will be found to range in the neighborhood of 100, not rarely 120 or thereabouts. It is usually a pulse of low tension, and this is more characteristic than is an increase in the frequency. Undue rapidity together with lowness of tension forms, in the absence of signs of cardiac disease, a very suspicious combination. Its value is enhanced if conjoined with increased body temperature between the extremes noted above. The respirations may or may not be increased. As a rule in incipient cases there is neither subjective nor objective dyspnea.

Loss of weight is a suspicious circumstance and is an invariable accompaniment, I believe, of incipient pulmonary tuberculosis. It is so often slight that it escapes the patient's notice, and therefore his statements are not always to be relied on. The value of this symptom depends largely on its association with other symptoms and signs; without them it can scarcely be held suggestive of tuberculosis. Decline in strength and a falling off of appetite are also to be considered in doubtful cases, but are of small evidential value.

Cough is usually the first symptom to attract the patient's attention and to arouse apprehensions in the mind of the physician as well as of the patient. Although it is frequently symptomatic of this disease even at its invasion, still it is not invariably so, and taken alone has but small diagnostic value as regards pulmonary tuberculosis. In every suspected case in which physical signs do not settle the question of diagnosis, the upper respiratory tract and the heart should be carefully examined for an explanation of the cough. Aurists will say that even the ears should not be left out of the field of exploration.

Sputum is, for a time, absent in cases of beginning tuberculosis, but when present exhibits nothing characteristic, unless, of course, it shows bacilli. Even hemoptysis is not pathognomonic, although highly suspicious of pulmonary tuberculosis. When due to a deposit of tubercles in the lungs, physical signs may usually be detected, or there will be some of the suggestive symptoms already considered. If not, then the gums, nares, pharynx, larynx, trachea and heart should be carefully examined for a possible source of the hemorrhage. In conjunction with a slight rise of temperature, loss of weight and cough, hemoptysis is very significant of tuberculosis.

Having thus briefly considered the symptoms attending incipient pulmonary phthisis, let us now take up the physical signs.

Inspection.—It is not necessary to describe the contour of the thorax with its narrow apices, weak musculature, deficient expansion, etc., which so often characterizes the tuberculous diathesis, and therefore I shall pass at once to such evidence of early tuberculosis as may be gained by inspection. One of the earliest ocular signs is lessened expansion of one apex, observed oftentimes in the supraclavicular region. This area may be slightly depressed or retracted, as compared with the other side. In rather more advanced cases, or those in which the tubercular deposits are not so limited, these same changes may be noted in the infraclavicular region as well. Another sign, which by Carcassonne and others is said to be a very early and significant one, is atrophy more or less marked of the scapulothoracic muscles on the affected side. That drooping of the shoulders, which forms a part of the phthisical habitus, may be seen at an early stage, but is generally present when the disease is more advanced.

Palpation does not furnish very reliable or positive information, except as corroborative of that obtained by other means. It is so largely influenced by individual peculiarities. Nevertheless, when in a suspected case there is a marked difference in the pectoral fremitus of the two apices, that apex at which it is distinctly increased is apt to be the seat of tubercular deposits. This is particularly likely to be the case in the suprascapular region, for a reason which is about to be stated.

Percussion is the means generally relied on for the detection of incipient pulmonary tuberculosis, yet it is not always so trustworthy as is auscultation. Dulness at either apex is usually regarded as indicative of the disease in question, and justly so. Still, one should always bear in mind that it is normal for some individuals to show slightly less resonance at the right apex. Therefore, in estimating the importance of trifling dulness at the right summit of the chest one must also consider the presence or absence of the symptoms of constitutional disturbance already spoken of. It is common for physicians to look for impaired resonance below the clavicle, whereas in my experience it is far more frequently found above and in the suprascapular region. This is owing to the fact that, as pointed out by Fowler, deposits of tubercles take place earlier and more frequently at the tip of the lung, along its borders and on the posterior aspect of the apex. Consequently a small

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patch of deficient resonance may often be detected behind in the suprascapular fossa, when in front there is no appreciable dulness. It is also in accord with my experience to find diminished resonance early along the vertebral border of the scapula, to uncover which it may be necessary to have the patient fold his arms across the chest in such a manner as to draw the shoulder-blades apart. For the sake of emphasis let me repeat that whenever these changes, however slight, exist at the left apex, it is strongly indicative of tuberculous disease. Finally, an initial alveolitis may sometimes occasion slight hyperresonance of a tympanitic quality. At a later period dulness replaces this tympanitic resonance.

Auscultation is a valuable method for the early recognition of pulmonary tuberculosis, yet to be of full service requires great familiarity with normal breath-sounds and slight transitions therefrom. As with regard to percussion, so also with auscultation; one must remember that it is normal to some individuals for the respiratory murmur at the right apex to be less vesicular, that is, bronchovesicular, as compared with the left. Therefore slight modifications on the right side do not have the same significance as when they are found at the left. Slight dulness and bronchovesicular breathing at the right summit of the chest, whether in front or behind, do not of themselves, without some of the more significant symptoms, constitute sufficient evidence on which to base a diagnosis of tuberculosis. Their value would be greatly enhanced if in a circumscribed area the inspiration should be wavy or jerky. Occurring on the left side, where vesicular breath-sounds are the rule, a bronchovesicular quality of the respiration is highly suspicious. When there is distinct bronchial breathing at either apex, it is not normal, but indicates disease, and being associated with unmistakable dulness, usually warrants a diagnosis of tubercles. Râles are not always present in incipient cases, and often when not heard on quiet respiration will be elicited by a deep inspiration or the act of coughing. Under these conditions they are fine crepitant or subcrepitant crackles heard toward or at the end of inspiration. They convey an impression of being moist, and not infrequently are mingled with fine bubbling râles of a somewhat larger size. These adventitious sounds may be very limited in extent or may occupy the entire dull area. Heard in either of the suprascapular fossæ they furnish extremely strong evidence of the disease under consideration. In front, especially along the inner margin of the lung, friction may be mistaken for these râles, yet should any such minute crackling râles be detected, it is generally safe to assume that tuberculosis is responsible for their presence. Incipient tuberculosis is as a rule unilateral, and bronchitis of non-tuberculous nature is bilateral. Moreover, the râles it produces in front are either heard over the course of the larger bronchi and are of large size, and toward the base rather than at the summit. The conjunction of dulness, bronchovesicular or bronchial breathing with these minute râles at one or both of the apices posteriorly will generally justify the conclusion that the lung is tuberculous. When these signs are distinct, doubt of their significance can scarcely be entertained. Moreover, in such pronounced cases there are usually well-marked constitutional symptoms. There is usually sputum, and this will very probably contain bacilli. The difficulty is in incipient cases which furnish no physical signs or such as are so ill defined that even a skilled examiner is not quite certain of their existence. If the temperature, weight, pulse-rate, state of the patient's strength, examination of the sputum, etc., can not help one out, then he would do well to postpone a definite diagnosis until by repeated examinations he can at length arrive at a positive conclusion. Not infrequently an experienced observer may become mentally convinced from the family and personal history, as for instance of previous pleurisy, from the general make-up and appearance of the individual, from the symptoms and from the *tout ensemble* of physical signs, that the patient has tuberculosis, and yet he does not feel warranted in giving expression to his conviction. If it does not seem best to wait for time to clear up the doubt, then recourse may be had to tuberculin, of which I will speak more fully a little later on.

Mensuration of the chest, which should include not only its expansion, but also its relative size as proportioned to height, the determination of the vital capacity by means of the spirometer, the individual's weight as related to his height, these and other accessory circumstances have their diagnostic value, but can not be more than referred to in the limts of this paper.

As regards the employment of the old tuberculin for diagnostic purposes, there is wide diversity of opinion, so wide indeed that statements are flatly contradicted. The opponents declare that it is not only unsafe, but also that it is unreliable, producing a reaction in syphilis and sometimes failing in cases of tuberculosis. The advocates of its use state the opposite just as positively. By those who have employed it extensively it is, however, stated that injurious effects follow too large doses or too frequent repetition of the injections. Therefore, the precautions to be observed are as follows: 1. Use Koch's old tuberculin, not tuberculin R. 2. Let the initial dose be .5 to 1 milligram of the tuberculin; larger doses than this to begin with are sometimes employed, but it is better to err on the side of caution. 3. If the first injection is not followed by the characteristic reaction, double the dose may be injected after an interval of three days. Some advise a shorter interval than this, but as there can be no other objection to waiting so long than the loss of time, it is again better to be over-cautious. 4. Should this dose again not be followed by reaction, double the second dose may be given after another three days. It will seldom happen that a tuberculous individual will not react after receiving as much as 5 milligrams, which may be regarded as a safe third dose. Occasionally, a large-sized and insensitive person will require even as much as 10 milligrams, but this amount should be reached gradually. The characteristic reaction consists of a rise of temperature of 2 degrees F. above the patient's average daily temperature as determined by repeated observations during several days prior to the first injection. There is often also a feeling of malaise and some increase of cough. This reaction generally takes place within twenty-four hours following the injection, but may be delayed to quite twenty-four hours. Carried out with the ordinary precautions stated, I consider this means of diagnosis safe, and have no hesitation in recommending it in cases in which careful physical examination does not enable one to arrive at a conclusion. I should not, however, advise recourse to this diagnostic procedure without having first exhausted other means at hand.

Of late we have been hearing much of the service rendered by the X-ray in the field of diagnosis. Tuberculous infiltration of an apex is revealed by a slight shadow in the affected area. It also affords a means of detecting enlargement of the bronchial glands. This was recently very well shown in the case of a man who

was sent to me for diagnosis. The skiagraph also showed slight opacity of the right apex, and thus confirmed what I had discovered by physical examination, yet which was so faint as to leave room for doubt.

It has also been recommended that small doses of potassium iodid, 3 grains three times a day, be employed to clear up doubtful cases. If there is slight alveolar catarrh of one apex producing uncertain physical signs, this potash salt will occasion the development of fine râles in the affected area or so modify the quality of the breath-sounds as to aid in the diagnosis.

Agglutination of the blood, after the Widal method, is too recent and not sufficiently proved to require more than a passing mention. There now remain only a few remarks concerning the diagnosis of advanced pulmonary tuberculosis. When the disease has progressed to this stage, there is generally mixed infection and it assumes the picture of ordinary consumption. As a rule there is no difficulty in arriving at a correct diagnosis in these cases. The symptom-complex alone is sufficient, and yet I would be the last to advise a reliance on symptomatology without examination of the chest. Occasionally, in aged people or persons with extensive chronic bronchial catarrh, it is not always easy to decide whether tuberculosis may not exist in such cases. A correct interpretation is facilitated by bearing in mind the fact that tuberculosis is a unilateral disease as a rule, and that the apex is always more involved than is the base of the lung. Of course, when the disease has progressed to an advanced stage, both lungs are likely to yield signs of the disease; but one can generally determine that the disease is more extensive or more advanced in one than in the other lung, one having been affected primarily, the other secondarily. Although râles of associated bronchitis may exist throughout, they are likely to be more numerous at the bases and of a different character from those of tuberculous apex diseases. These latter are of a crackling kind, small or medium sized, and are found together with dulness on percussion. If the breath-sounds are not so obscured by râles as to be of undeterminable quality, they are bronchovesicular, bronchial or cavernous. Dulness at the base and resonance at the top do not occur in pulmonary tuberculosis, unless very exceptionally a basic affection becomes secondarily tuberculous. When anfractuous cavities have riddled an upper lobe, or tuberculous foci are scattered with comparative healthy intervening tissue, and not a normal opposite lung with which to make comparison, it may not always be easy to determine the exact nature of the percussion note. One must then rely on auscultation to help him out, or he must await the result of treatment, in the hope that by clearing up the bronchitis at the base he may then definitely ascertain the condition of the apex. The detection of bacilli in the sputum will settle the nature of the case; but these are not always present in chronic ulcerated phthisis, and the failure to detect bacilli is no proof that the affection is not tuberculosis.

It may be set down as a general proposition that dulness and bronchovesicular or bronchial breathing and râles at the apex indicate pulmonary tuberculosis. Signs of excavation corroborate the diagnosis.

Limited space forbids further consideration of this subject. I have endeavored as far as possible to present the subject in a general way applicable to the vast majority of cases and not to detail the multiform deviations that may be encountered. Neither have I attempted to discuss the diagnosis of acute cases of the pneumonic type, but merely the form of the affection most often met. Acute tuberculous bronchopneumonia, being an apex disease, is governed, so far as concerns its physical signs, by the same principles that underlie the diagnosis of the chronic varieties. The main difference consists in the greater severity of symptoms and more rapid development of the changes on which the physical phenomena depend.

103 State Street.

NOTIFICATION OF TUBERCULOSIS.*

ARTHUR R. REYNOLDS, M. D.
Commissioner of Health.
CHICAGO.

Notification of the existence of tuberculosis is not demanded by the Department of Health of Chicago.

Notification of a contagious disease to a health authority implies some action on the part of that authority; and no action commensurate with the existence of a disease which, it is estimated, affects one in every sixty of the world's population, is physically possible with the limited resources of our department.

This, however, is not the most important objection to the notification scheme. If a consumptive person is properly instructed how to destroy the contagion in his sputum there is no reason why restriction should be placed on his movements, and in many cases he may be a useful and productive member of society for years. Any public action that would tend to brand him as an outcast or one to be shunned would be a great wrong, if the sufferer took proper care of his expectorations.

Then, again, if we would prosecute those who fail to report tuberculosis, experience proves that it would lead to concealment of cases, and as the disease is generally chronic, the patient may change his residence many times before he dies.

I have never been able to convince myself that tuberculosis should be a notifiable disease. The diagnosis of pulmonary consumption is frequently surrounded with great difficulty, and if we endeavor to enforce notification we would have to be able, promptly and indisputably, to prove the existence of the disease. How great and how absolutely insurmountable this difficulty is, is demonstrated by post-mortem statistics, which show that out of every hundred persons "posted" for other causes of death twenty-two present evidence of healed tuberculosis.

The only object to be gained by notification would be to enable health officials to warn the sufferer of the danger in his sputum and to placard the house to warn off approaching visitors. It is my belief, based on practical experience with other contagious diseases, that these results may be better obtained through the voluntary cooperation of the profession than by attempts to compel the attending physician to report consumptive cases. In the June, 1899, Bulletin of the Department is an article which shows conclusively the advantages of the former over the latter system in such diseases as diphtheria and scarlet fever. The following is the article referred to:

VOLUNTARY VS. COMPULSORY NOTIFICATION OF CONTAGIOUS DISEASES IN CHICAGO.

On resuming charge of the department in the spring of 1897 the commissioner found the plan—inaugurated by him in 1895—of allowing physicians to "assume the responsibility" of enforcing precautionary measures against the spread of contagion

* Presented in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

in cases of diphtheria and scarlet fever attended by them, had resulted in a material increase in the number of notifications received and of disinfections performed. Its operation had also very largely removed the friction between the department and the medical profession engendered by previous efforts to compel reports of contagious diseases by prosecutions, fines, etc.

To what extent the reports under the old system were defective may be inferred from the following figures of cases reported, premises placarded, etc., during the year preceding the innovation: The total notifications of diphtheria cases in 1894 were 1921; and it may be noted that the total diphtheria deaths recorded were 1293. These figures would give the incredible mortality rate of 67.3 per cent. for diphtheria. In 1897 the total diphtheria notifications were 3103 and the recorded diphtheria deaths were 726.

In the latter year, 1897, therefore, while there was a reduction of 44 per cent. in the number of recorded deaths there was an increase of 62 per cent. in the number of notified cases—an improvement of 106 per cent. in the notification of diphtheria cases in proportion to reported deaths as compared with the year 1894, before the adoption of the new plan.

Comparing the first six months of the present year—1899—with the corresponding period of 1897 the increase in notifications is much more marked. In 1897, between January 1 and June 30 inclusive, there were 1747 cases of the notifiable contagious diseases reported. Between January 1 and June 30 inclusive of the present year there were 4320 cases of such diseases reported—an increase of 147 per cent. in notifications.

The following table, compiled from the monthly bulletins, shows the number of contagious-disease cases reported; the number of premises placarded on such reports; the number of contagious-disease premises disinfected by the department; the total area disinfected; and the number of contagious-disease funerals supervised—during the respective periods:

The accompanying table shows an actual increase in the two years of 147 per cent. in the number of cases of the contagious diseases reported: of 73 per cent. in the number of cases of the contagious-disease premises placarded; of 400 per cent. in the number and of 600 per cent. in the area, of such premises disinfected; and of 70 per cent. in the number of contagious-disease funerals supervised by the department.

These results of the "assume-the-responsibility" plan—by which it was sought, primarily, to secure the voluntary, in lieu of the law-compelled, co-operation of the medical profession with the department—are the justification of the experiment and the sufficient warrant for its continuance and development.

The ordinance requirement of uncompensated professional service by physicians, in the report of their contagious-disease cases, had not only been a demonstrated failure, but the tactless efforts to enforce the provision had alienated a most valuable ally of any health department. Now, more than ever before in its history, this department is in touch with the physicians of the city; more fully than ever it receives the information from them necessary to success in its efforts to restrict the spread of the communicable diseases and to protect and promote the public health.

It is not meant by this to imply that perfection has been attained. There are still too many physicians who "assume the responsibility" on the notification report and neglect to discharge the responsibility in practice. Too many visitors are allowed by them in infected rooms and premises; too many children, still in the communicable stage of disease—especially of scarlet fever—are permitted to mingle with others and even to attend school; not enough warning to the neighborhood is given in all cases; disinfection by the family, under their

	Diseases.	1897. Jan.	Feb.	Mar.	Apr.	May.	June.	Totals six months 1897	1899. Jan.	Feb.	Mar.	Apr.	May.	June.	Totals six months 1899.
Number of cases reported	Diphtheria	273	219	215	180	198	219	1760	381	307	284	240	266	248	4380
	Scarlet-fever	87	59	93	63	92	49		306	377	522	507	512	370	
	All other*	...	...	6	4	1	2		9	5	11	10	12	13	
Number of premises placarded	Diphtheria	189	166	133	142	174	141	1261	225	174	157	129	130	119	3304
	Scarlet fever	60	45	58	44	70	39		102	210	240	264	255	199	
Number of premises disinfected	Diphtheria	94	60	44	46	45	48	419	185	172	148	121	103	125	2096
	Scarlet-fever	6	15	12	13	9	11		82	140	185	273	248	254	
	All other	...	...	6	4	1	2		9	5	11	10	12	15	
Contagious-disease funerals supervised	Diphtheria	42	27	34	32	26	31	223	30	38	38	33	42	45	380
	All other	6	2	6	8	7	2		10	14	36	29	39	26	

Total area disinfected in the 1897 period, 1,075,581 cubic feet. In the 1899 period, 7,669,641 cubic feet, or more than six times the area disinfected in the six months of 1897.

* "All other" includes cases of tuberculosis, measles, typhoid-fever, smallpox and glanders.

DISEASES TO BE REPORTED: Diphtheria, Measles, Membranous Croup, Puerperal Fever, Scarlet Fever, Smallpox, Typhoid Fever, Whooping Cough. Optional—Tuberculosis.

NOTE.—Where the Attending Physician will undertake to enforce necessary measures against the spread of contagion in a case of any of the above-named diseases, the intention should be indicated by writing in the word **assume** in Entry No. 8. If this be done the DEPARTMENT will not placard the premises except in Smallpox. If it is proven that efficient precautions are not being enforced, the premises will be taken charge of, placarded and quarantined by the DEPARTMENT—Tuberculosis excepted.

If the Physician does not see fit to assume this responsibility, the word **decline** should be written in the blank space, when the DEPARTMENT will placard and quarantine as may be necessary for the protection of the neighborhood. Absence of any indication will be construed as declining the responsibility and the DEPARTMENT will take action accordingly.

Where the responsibility is assumed, the Physician must cause neighboring families to be fully warned against the disease and must prohibit members of the infected family from exposing others to the risk of infection

1 Chicago..... 1 ..... Case of.....

2 No..... Ward
Avenue, Boulevard, Court, Place, Street.

3 Case.....connected with Milk Shop or Depot, Laundry, Shop, other business place.
If not so connected write in blank space the word **not.**

4 Name of Patient.....

5 Age.....years .....months. Color.....Sex.....
(If the Patient had lived outside Chicago within last 30 days, state below where and date of return.)

6 Returned from.....on the .....
Name of place and State. Date of return.

7 .....
In Puerperal Fever—where a Midwife had been in attendance, give her name and address on above line.

8 See NOTE above.—I.....the responsibility of preventing spread of contagion from this case.

.....M. D.

Address.....

direction, is not always thorough and efficient; and there are many other laches and sanitary sins, both of omission and of commission, on the part of the weaker brethren of the profession.

But these are in a minority steadily becoming smaller. Constant pressure by the department through repeated warning and counsel—the holding up of burial permits—the reference of certificates to the coroner for investigation in aggravated cases—and other corrective, mainly educational, measures are remedying these defects, and the fact remains that an immense improvement has already been effected by this plan in the control of the communicable diseases in Chicago.

On the contagious-disease notification card of the Department provision is made for the report of tuberculosis, but it is "optional," and premises are never placarded or quarantined on such report. Cases of destitute consumptives, whose conditions are a menace to the neighborhood, are taken charge of, admission to such provision as exists—usually to Dunning—is secured, and the premises are disinfected by the Department. The foregoing is a reproduction of the notification card:

After being vacated, either by death or removal, premises that have been occupied by a consumptive are also disinfected by the Department on request of the attending physician; but such requests are not numerous, although increasing from year to year.

In this connection I would urge, as to Chicago, at least, that the attending physician should direct disinfection himself after tuberculosis—as well as after other contagious diseases—in families able to defray the expense, and should exact his fee for this service. This would largely relieve our overworked disinfecting corps and enable it to devote greater efforts to the destitute—those unable to pay—who, as a rule, require more thorough work than the well-to-do.

I do not understand why so many physicians delegate this part of their professional opportunities to public officials. In the nature of things, the attending physician is more valuable than any public official can be. From his frequent visits he is better informed as to the requirements and conditions of his case; he is relied on by the family as to advice and precautions necessary to prevent spread of the contagion to others; and he is either openly or covertly considered responsible for any spread, should it occur. These services are not taken into account in any fee bill; but if their value should come to be generally understood by the public their adequate compensation would naturally follow.

He is the most potent instructor of the public on the danger of infection generally, and of tuberculosis in particular, and I believe strongly that the public needs only to know what is necessary and wise to do to prevent tuberculosis, and all will be done that is useful. The best agency to this end is a wise, vigilant and energetic medical profession, properly taught in the medical colleges, and supported and reinforced by the medical press and the lay press as well.

Notification means policing, quarantines and force through public officials. Education means a reduction of the disease by intelligence and natural methods, and it teaches that the responsibility ultimately rests on the individual, who will be as zealous for the enforcement of preventive measures, when he knows and understands, as will be any public employee.

THE CORRESPONDENT of the *Gazetta degli Ospedali* states that the average number of persons present at the section meetings of the International Medical Congress was not over seventeen.

NECESSITY OF EXAMINATION OF THE SPUTUM IN THE DIAGNOSIS OF PULMONARY TUBERCULOSIS.*

C. M. WOOD, M.D.
Physician to Cook County Consumptive Hospital.
DUNNING, ILL.

It has been wisely said that failure to make use of the well-recognized means of clinical investigation leads to more errors in diagnosis than does ignorance. The laity sometimes neglect to take advantage of the wonderful discovery of Jenner, and we wonder at their apathy. What shall we say of the physician who, in so serious a matter as the diagnosis of phthisis, neglects to make use of the simple and beautiful staining methods of Koch? The typical consumptive is a deplorably familiar spectacle. The layman thinks that he can recognize the disease at sight, but let no physician make this mistake.

Of the 1400 patients supposed to be in the advanced stages of pulmonary tuberculosis and sent to the Cook County Hospital for Consumptives from the various hospitals and physicians of Cook county, 120, or 8.5 per cent., have proved, after thorough investigation and prolonged observation, to be non-tuberculous. Some of the mistakes were practically unavoidable and were corrected only on the autopsy table; but in the vast majority of them a negative sputum examination, had it been made, would have led to a more careful physical examination and so revealed the true condition present. Except from a scientific standpoint many of the errors were of small consequence, the patients suffering from conditions even less curable than phthisis. In other cases the faulty diagnosis had deprived the patients of treatment which would have given much relief, if not positive cure.

The difficulty of recognizing incipient phthisis is admitted by all, but are we not too apt to pass lightly over a case presenting marked emaciation, cachexia, cough, hemoptysis, night sweats, with diffuse lung findings, and risk the error of a snap-shot diagnosis? To make a diagnosis of phthisis on the sputum examination alone indicates indolence; to depend on the physical examination without investigating the sputum microscopically shows overconfidence in one's diagnostic ability.

Note the following case:

J. A., Swede, dock laborer, aged 25 years, was admitted May, 1900, having been refused at one of the hospitals in this city because consumptive. Mother died of phthisis. Has been coughing three years, lost 28 pounds in weight; has had pain in chest, occasional night sweats and frequent small hemorrhages; profuse mucopurulent expectoration, loss of appetite, and some diarrhea. Temperature, 98 to 100 F.

Examination showed chest to be symmetrical; no retraction and no bulging; dulness with faint bronchial breathing and coarse râles over entire right lung. Left lung negative except a few scattered râles.

Without examination of the sputum this case might readily have passed for a well-marked tuberculosis of the right lung. However, repeated examinations of the abundant sputum showed the absence of tubercle bacilli, and lead to a more minute examination of the chest. Then it was noted that the dulness of the right lung, while marked throughout, was nearly absolute toward the base, and at times the expiratory sound over the sixth and seventh ribs in the posterior axillary line had an amphoric quality. An exploring needle inserted at

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this point yielded pus, and rib resection and pneumonotomy, the next day, showed a lung abscess about the size of a small orange situated in the right lower lobe 3 c.m. beneath the pleural surface. The surrounding lung was carnified, and the abscess was draining very imperfectly through a bronchial opening in the upper wall. The incision was enlarged and a drainage tube inserted. The fever, cough and expectoration disappeared very rapidly, but the patient died at the end of a month from general amyloid disease—the result of having been neglected for three years on a mistaken diagnosis of phthisis.

As is well known, there is a certain small number of cases of fibroid phthisis so chronic in their nature as to yield no bacilli even after the most thorough and repeated examination of the sputum. These are readily recognized to be tuberculous by their prompt reaction to tuberculin. The presence of tubercle bacilli in the uncontaminated sputum is recognized as absolute proof of the tuberculous nature of the disease present; the absence of the bacilli does not prove the contrary. In my opinion, the converse is true of the tuberculin test. Reaction following the injection does not *absolutely* prove the presence of tuberculosis; but should reaction fail to follow the injection of so large a dose as 10 m. of a 2 per cent. solution, in my experience tuberculosis is excluded. The frequent occurrence of the so-called "false reaction," especially in syphilitics, has been to me confusing.

A list of the 120 cases mistaken for pulmonary tuberculosis is both interesting and profitable. The diagnosis of aneurysm and endocardial lesions was either made or confirmed by Prof. R. H. Babcock; of progressive pernicious anemia, by Prof. W. A. Evans, and the diagnosis of malignant disease was confirmed postmortem.

The cases consisted of the following: Chronic bronchitis, usually with some complication increasing the anemia and prostration, e. g., exposure, senility, syphilis, gastritis, etc., 45; emphysema, with varying degrees of bronchitis, 12; bronchiectasis, 6; endocarditis—mitral 10, aortic 5, tricuspid 1, total 16; lung abscess, 2; empyema,6; acute pneumonia (resolving), 6; aortic aneurysm, 3; goiter, 2; syphilis (?)—bronchitis 4, pleura 2, larynx 1, gumma of lung 1, total 8; passive congestion and edema of lungs—from cerebral hemorrhage 1, nephritis 2, cirrhosis of liver 2, total 5; malaria, 2; vicarious menstruation following oophorectomy, 2; secondary sarcoma of lung, 1; sarcoma of mediastinal glands, 1; progressive pernicious anemia, 1 subphrenic abscess following gunshot wound, 1; typhoid convalescence, 1.

THE RIGHT OF THE STATE TO PROVIDE HOSPITALS.*

FINLEY SCRUGGS, LL.B.

MEMBER OF THE CHICAGO BAR.

The paramount object of governments is the protection of their citizens in life, limb, property, and the pursuit of happiness; for this alone the individual pays tribute and renders fealty, and since a diseased person can not have the perfect enjoyment of either, it is manifest that not only does the state possess the inherent right to secure and preserve the health of its inhabitants, but that such is, perhaps, the highest duty it owes them.

The power of the commonwealth to promulgate and enforce sanitary regulations for the prevention and spread of disease, and to establish and maintain hospitals and eleemosynary institutions for the treatment and care of its afflicted citizens, both directly and through the medium of its subsidiary governmental agencies, has been uniformly recognized by law-makers and unequivocally sustained by the judiciary. To show that this is considered one of the most important and vital functions of government, it is only necessary to point to the arbitrary power which the people, in their assembled wisdom, have seen fit to vest in public boards of health, who may prevent the going out or the coming in of the individual, confine him in a hospital and subject him by force to medical treatment; regulate, and even forbid, both the importation and exportation of merchandise; and in the most summary manner may condemn and destroy private property. In the exigent discharge of duty they deprive the citizen of his property and restrain his liberty, without invoking the aid of a court of law or granting a trial by jury—a right which no other power has in times of peace. Their authority seems to cease only at the taking of life.

The duty of the state extends to the adoption of all the means known to science for the prevention, cure, and eradication of dangerous diseases, while its power to do so is limited only by the legislative discretion and the ultimate resources of the community. It is not circumscribed by the treatment of diseases designated as contagious or infectious; in this respect the people have vested in the law-making power a discretion whose only limitations are that the provisions must be made for the public good and for public purposes, and so long as the legislature stays within these bounds their discretion is not subject to review by the judicial department. Some of the American states has gone so far as to undertake the care of inebriates, and have established, wholly or partly at public expense, asylums for their treatment.

It is, therefore, safe to assert that the law-making department of the government may say what disease it is for the public good to check by treatment at the expense of the state. It is undoubtedly not limited to the stage of disease; incipient sufferers may be cared for as well as those physically helpless. There is one limitation dependent on the character of the disease; it is this: that while the state may *forcibly* restrain and commit to a hospital a person afflicted by a contagious or infectious disease, the rights guaranteed the individual by our constitution would be infringed by an *involuntary* commitment when the malady is non-infectious.

It must be borne in mind that hospitals established by the state must be under its supervision, and *should* be open to all its citizens on the same terms; although they *may* be maintained for the indigent only. Taxes can not be legally levied for the purpose of donation to benevolent and charitable societies under the supervision of private individuals, and over which public authorities have no control; but it has been held that a municipality—and of course a state—may pay a part of the expense of a charitable institution, to which it has the right to send its citizens.

I have been asked whether it would be legal for a state to appropriate money for a sanatorium located beyond its territorial limits. A judicial determination of this exact question could not be found in the short time

* Presented in a Symposium on Tuberculosis, to the Section on Hygiene and Sanitary Science, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

which I have had to devote to this subject. However, it is not easy to conceive a legal obstacle to such an action, provided control of the institution is vested in the officers of the commonwealth, or the right to commit its citizens is preserved. Instances are common of appropriations being made for the display of a state's resources at exhibitions held beyond its limits. If it be legal to spend the people's money to erect a temporary building in a distant community for the purpose of exploiting material wealth, it must certainly be so to build a sanatorium in some more salubrious climate in order that a state may afford its citizens the benefit of necessary hygienic surroundings which it can not give them within its own territory.

A commonwealth may permit the erection within its boundaries of hospitals or sanatoria for patients coming from other states and suffering from such a disease as tuberculosis. It might afterward conclude that such a hospital was dangerous to the community, had become a nuisance, and should be removed, in which event its action in allowing the location would not estop nor militate against it; for the law is, that whatever is in its inception, or afterward becomes, a public nuisance, endangering the public health, may be abated, and the fact that originally it was permitted or licensed by law does not abridge this remedy.

It is apparent that our organic law affords encouragement to the medical fraternity in the performance of the duty they owe to the public of laying before our law-making power the needs of a community measured by a constantly advancing science, and that whether we are to have public institutions devoted to the stamping out of *all* dangerous diseases, depends in great measure on the insistence with which these needs are presented. You should in nowise lose heart because of partial failures in the past, for some of our legislatures may be credited with having done well in this respect on the same principle that Honora Gallagher did well in choosing a husband: for she might have done worse, and, it was said, that if she might have done worse, she did well for a Gallagher.

Marquette Building.

THE TREATMENT OF PULMONARY TUBERCULOSIS.

JOHN M. LISLE, M.D.
COLUMBUS, OHIO.

The most common point of infection in tuberculosis is the mucous membrane of the bronchi and of air passages. It is there that it must be attacked. It does not affect the blood, hence its medication could not interfere with the operations of the germ unless such medication were carried far beyond the ability of the patient to sustain. Stomachic medication is open to the same objection.

The chief reliance of the profession has been cod-liver oil and creosote. The former is a comparatively easily assimilated tissue builder, but is not a remedial agent in any sense of the word. It may temporarily upbuild a patient, but it does not cure because it does not eliminate the bacillus. Having for several years condemned the use of creosote in tuberculous cases, I am glad to note its abandonment by the more observing of the profession, but sorry to see them substituting oil of cloves, an agent equally as irritating and as injurious to digestion.

The effect of creosote on the pancreatic gland, following its use in large doses, is usually the most baleful of its consequences. Unquestionably the pancreatic and the gastric secretions are markedly stimulated in the beginning, and just as the stomach does better work in its peculiar function of digestion, so do the intestines more perfectly perform their duty in the assimilation of the food products reaching them, but the improvement in nutrition by the use of creosote is illusory. Not much time elapses before the pancreatic gland conspicuously ceases to perform its function, and intestinal indigestion, with its train of distressing evils, supervenes. Improvement in this latter respect, however, is the main factor on which the administration of creosote depends for benefit in the treatment of tuberculosis, it being claimed that improvement in nutrition is gained by its exhibition and waste so repaired. Churchill, in his remarks on nutrition and favoring the use of hypophosphites, has recorded his objection to the use of those stimulants, in the exciting sense, to the gastric and pancreatic glands—among which is creosote—and observes that while the immediate results were apparently beneficial, the exaltation in their capacity to secrete and excrete their juices was very temporary and surely followed by an exhaustion from which all means failed to rally.

After years of experience in the treatment of this disease and observing carefully hundreds of persons subjected to the creosote treatment, not a case is recalled which was permanently benefited by its use.

Serum therapy deserves better success than it has attained, and earnest investigators have been striving for years to secure a specific for tuberculosis along this line, but up to the present their efforts have been futile. The hope of the medical profession that ultimate success would crown such well-directed labor has caused them to neglect the more practical channel of the application of specific germicides to the seat of the disease.

Residence in certain climates and travel at home and abroad have long been advised by physicians as beneficial. Elaborate and persistent advertising have made many sections popular as health resorts. They depend entirely upon altitude, proximity of pine forests, the absence of fog, dryness of atmosphere or mineral springs as curative agents. Incipient cases are sometimes benefited in this manner, but it rarely happens that this class of persons consider their condition sufficiently serious to justify attention, while those in the more advanced stages are often permanently injured and their death hastened thereby. At the best, relief is only temporary, unless residence in a suitable climate is permanent, and this generally amounts to banishment from home, friends, associations and business, decidedly otherwise than pleasant to contemplate. The most salubrious atmosphere is not germicidal nor antiseptic, and while the proliferation of the germs may be retarded, they are not eradicated, hence a cure does not result.

The most serious objection, however, to regions supposed to possess advantages of a climatic nature is that they have been visited by so many phthisical persons that they must be hotbeds of infection, if there is any truth in the contagiousness of tuberculosis. The author, in the course of his investigations of this subject, has visited every section of the United States reputed to be desirable as a residence for this class of patients. As a result he has had his opinions as to the meager value of climate confirmed and has been shocked by the prevalence of the disease among natives.

The writer believes in the germ theory and in its etiologic relation to tuberculosis. It is known that there

are germicidal agents capable of destroying the germ or rendering it inert. Physicians believe in aseptic conditions, to obtain which they employ antiseptic agents. Knowledge of the value of antiseptics has become so general that should a physician or surgeon treat either disease or injury without due regard to sepsis or neglect to render the surroundings of his patient aseptic he would be held to be guilty of criminal ignorance or indolence.

That this principle should be applied to the treatment of tuberculosis is not only rational, but, founded on a substantial rather than a hypothetical basis, is in strict harmony with therapeutic law.

By the aid of a suitable culture-medium tubercle bacilli germs can be propagated in sufficient quantity for chemical as well as microscopical study. The germ having been isolated, and its specific pathogenic character demonstrated, the function of the microscopist ceases. It remains for the chemist to determine whether among chemical agents there can be found any capable of destroying it.

Prof. Vaughan, by a series of experiments on guinea-pigs and rabbits, found that animals whose secretions were rendered alkaline previous to inoculation were more susceptible to infection than those in the normal or acid condition. Scientists engaged in the propagation of this particular germ agree that the culture media must be rendered mildly alkaline to secure propagation of the bacillus. From these data I conclude that acid media are inimical to the growth of the bacillus tuberculosis and indicate from what class of agents a bacillicide may be secured.

If bacilli be immersed in a solution of unstable carbon compounds of the aromatic series (type C_6H_6) they will be destroyed in 30 seconds. Bacilli-laden sputum immersed in a 1 to 500 solution is rendered inert in 38 hours. Thus we see that different degrees of strength of the bacillicide solution act with different degrees of intensity.

Given the pathogenic germ, the bacillus tuberculosis, and the chemical composition that will destroy it external to the human body, can we make use of these accepted facts and from them devise ways and means by which the bacillicide can be applied to the area of infection in such potency as to prevent the further proliferation of the germ and render inert those already active? This is a practical question, and can only be answered by a practical test. No theory, however plausible, need be accepted.

The organs of respiration will admit but one element safely. That element is air. The epiglottis instinctively closes upon any attempt to introduce a medicament in the form of a powder or liquid. While it is possible to introduce agents by means of a tube, such agents would only reach the larger bronchi. Access to the smaller bronchi and air vesicles by this method is a physical impossibility. It is possible, on the other hand, to impregnate atmospheric air with germicidal and antiseptic agents, and thereby secure their introduction into the remote recesses of the organs of respiration without effort or inconvenience on the part of the patient.

To efficiently accomplish this, different mechanical appliances will be found necessary. The first in importance is a power air pump of large capacity, by which atmospheric air is forced through a series of cylinders containing the germicidal and antiseptic agents. This process thoroughly impregnates the atmospheric air with the properties of the agents through which it passes. From the impregnating cylinders it must be conveyed through an additional series of cylinders for the purpose of precipitating moisture and thence to the apartment of the patient in quantity sufficient to meet the requirements of the case. Secondly, the apartment occupied by the patient must be supplied with a vaporizer sufficient in capacity to thoroughly saturate the air of the apartment day and night with an aromatic germicidal and antiseptic vapor. The latter appliance is supplemental to the first. Third, a small treatment-room must be provided, in which a very dense vapor can be produced from the agents employed, thus subjecting the patient to a more concentrated action than is practicable in the living and sleeping rooms. This is requisite in acute cases, or where some special complication indicates a greater therapeutic latitude than is available in apartments supplied under the two previous methods.

Bacillicide solutions or vapors sufficiently concentrated to destroy the bacillus immediately upon contact would, at the same time, be incompatible with animal life. I have shown, however, that a greatly attenuated solution is equally destructive of germ life, simply requiring a longer time in which to accomplish its purpose.

To destroy pathogenic germs in an infected house, sulphur is burned or, more recently, it has been ascertained that a pound of formalin vaporized in a room containing 1000 cubic feet will exterminate every disease germ in from one to two hours. This vapor does more than destroy the germs in exposed places—it will thoroughly disinfect a library, effecting the destruction of the germs even though sheltered between the leaves of tightly-closed volumes. Thus we learn that antiseptic vapors and solutions are equally inimical to germ life.

Physiologists tell us that the area of respiratory surface in both lungs amounts to about 1400 square feet, that is to say, a few pounds of tissue is delicately subdivided into a fine membrane richly endowed with blood-vessels, all of which is divinely arranged in the small space of the chest cavity. Remembering this anatomic plan, we have, for purposes of treatment, the lung tissue divided into a microscopic membrane.

By keeping the patient constantly breathing a germicidal and antiseptic air, this microscopic membrane is practically suspended in it and the residual air becomes, and is kept, a germicidal and antiseptic air. This being the case, the entire respiratory surface is rendered aseptic and, therefore, proof against further infection by the bacillus from without as well as from within by caseous or other degeneration of the tubercle.

But rendering the respiratory tract aseptic is only prophylactic. While it prevents further infection and proliferation along this most dangerous channel something more is needed to reach the bacillus intrenched in the tissues. This can only be accomplished by systemic saturation.

When we consider that 1400 square feet of membrane is in continuous contact with the germicidal and antiseptic vapor and that this membrane is not stationary, but with every contraction of the chest walls in the respiratory process the vapor is brought into forced contact with the membrane, we can appreciate, from the law of osmosis and of the diffusion of gases, that a certain, definite quantity is absorbed and the blood more certainly and safely impregnated than would be possible by any other means of administration. Once in the circulation, every cell, not only of the lungs but of every other tissue, except the tubercle tissue, is brought under its influence.

By continuous process of treatment, healthy tissue is kept immunized and further proliferation of the bacilli

is impossible. Exception is noted of lack of access to the tubercle tissue where, by reason of its being devoid of vascular supply, the bacilli there encysted are safe from any attack by bacillicides in the form of chemical compounds, antiphthisin, tuberculin or others. Their castle is their own, impregnable to enemies from without, but susceptible to attacks by foes from within. In consequence of having no nutritive supply it is short lived, and this retrograde metamorphosis is hastened by caseous degeneration, a process due to the production of ptomains from the bacilli. The early degeneration of the tubercle exposes the heretofore protected bacilli to the action of the germicidal-antiseptic vapor and those not ejected by expectoration are in an atmosphere antagonistic to the causation by them of further infection. If, however, instead of caseous or other degeneration of the tubercle, fibrosis occurs about the tubercular mass there need be no fear of further proliferation or infection, as bacilli have never been known to penetrate fibroid tissue.

If we can saturate all tissue reached by the circulation of the blood as well as the respiratory surface, we have placed the phthisical patient in the best possible condition for recovery, and all will recover except those in whom the degenerative changes are too extensive to be compatible with the remaining vitality.

That this process does saturate all tissues is evidenced by the condition of the urine and perspiration after ten days' to two weeks' exposure of the patient to treatment. The urine after voiding will remain free from decomposition an indefinite time and it and the perspiration will be found to be laden with the agents employed.

If every case of pulmonary tuberculosis could be brought under thorough germicidal and antiseptic treatment at the time of primary infection no further treatment would be necessary, because the bacilli would be destroyed and the disease arrested before the destructive pathologic changes due to the germ and its secondary toxic property had undermined the nutrition and paralyzed the reactive power of the nerve centers.

The primary action of the bacillus, like any other foreign body, is that of an irritant with the usual histologic changes—exudation of fibrin and leucocytes, epithelial proliferation and interalveolar growth—but with the additional pathologic element, sepsis. This is the result of the presence of a specific toxin, denominated by Vaughan, Bregier, Selmi and others, a ptomain, a putrefactive animal alkaloid, a knowledge of which elucidates many of the distressing symptoms of the disease and constitutes an infallible index to its progression or retrogression.

Few cases being recognized at the time of primary infection, a more extended therapy is required than that comprised in a germicide. The important secondary product of this special pathogenic organism, the ptomain, is subordinate in importance only to the germ itself, but is equally amenable to specific medication by the agents before referred to.

I have stated that a solution composed of unstable carbon compounds has been proved to be destructive to the bacillus and that it might be introduced into the circulation by keeping the volatilized fluid in constant contact with the respiratory surface.

It is a sustained fact that toxic substances readily assume non-toxic form when in contact with substances from which they can appropriate new elements or groups of elements for which they have chemical affinities. Carbon compounds too, readily breaking up when subjected to even weak chemical action, possess marked antiseptic properties.

Further, carbon compounds in breaking up do not resolve into their component elements, but divide into groups of elements to form substances differing in make-up and chemical characteristics from the original types. Bearing in mind the unstable nature of the carbon compounds selected, the facility with which they divide to form new compounds with the products of destructive cell metabolism and the non-toxic character of the new compounds formed, an accurate idea of the theory underlying the method by which we may destroy not only the bacillus, but at the same time neutralize or antidote its toxin, the ptomain, may be readily gained.

I desire to direct particular attention to the salutary influence of the stimulating germicidal-antiseptic vapor on the ulceration consequent on the tubercular process. Every physician has noticed the rapid decline of phthisical patients when large quantities of purulent matter are expectorated—an evidence of extensive ulceration—and felt his inability to control the degenerative physical change. A physician who has had experience with the method of treatment outlined by me must have noticed how speedily the sputum changed from a heavy, purulent to a mucopurulent and, finally, to a mucous character. This change is attained through the combined influence of the local and general antiseptic treatment. By continuous application of the vapor to the surface of the ulcer the same results will be secured as by the application of a stimulating antiseptic to an external ulcer—stimulation, granulation and cicatrization. The ulcerative process peculiar to this disease is of the chronic, indolent variety, hence the benefits derived from a stimulating antiseptic.

Certain clinical manifestations follow the administration of the germicidal-antiseptic vapor as suggested. Within from forty-eight to seventy-two hours there will be improvement in the capillary circulation which is attributable to the stimulating effect upon the vasomotor nerves and the strengthening of the inhibitory nerves of the heart, due to the neutralization of the ptomains. Night sweats, which have been cold and enervating, will become warm and exhilarating and, instead of the extremities, the head, neck and chest will sweat most freely. Appetite is restored, a relish for food appears and care must be exercised, in many cases, to prevent the eating of more food than can be properly digested. This caution is particularly necessary during the initiatory period of treatment when the patient is closely confined and outdoor exercise limited.

In dealing with a disease of such gravity as pulmonary tuberculosis too much reliance must not be placed on aid from one direction alone. It is better that we seek in the general domain of materia medica, therapeutics and hygiene for whatever may be of value. All the adjuncts necessary to conduct the case to a successful issue should be faithfully, persistently and zealously employed. The best hygienic conditions possible should surround the patient. Food of a nutritious quality, well cooked and temptingly presented; baths, salt water preferred, moderate exercise, never to weariness, all contribute their portion to success and any one neglected may prove an obstacle to a favorable termination.

Tuberculosis being a specific, constitutional disease, with an indefinite number of complications, the possibility of any physician being wise enough to formulate a treatment sufficiently broad to cover all conditions is exceedingly remote. Each case is a distinct problem which can only be solved by the physician in attendance.

The broader his professional knowledge, the keener his therapeutical skill, the better will be his results in the use of the method of treatment I have advised.

It has been my practice to restrict patients to their apartments during the first week or two, only permitting absence at meal time and a half hour before and after for exercise.

The object of this restriction is to secure the most complete degree of saturation possible at the earliest period. When there is much elevation of temperature little or no vapor should be employed in the living apartments during that portion of the day when it is at its height, but during the intermission the vapor should be vigorously pushed. In acute general tuberculosis especially, the vapor should be developed to its limit or the patient will perish from toxemia which, by the way, always occurs under any other method of treatment, the patient being overwhelmed by the rapid proliferation of the bacillus and the consequent increased production of its toxin.

It is a matter of common observation that most consumptives suffer, sooner or later, from a persistent, debilitating diarrhea, occasionally caused by indigestion, but more frequently by tubercular infection of the intestines. The patient swallows bacilli-laden sputum which passing along the alimentary canal, finds a denuded mucous membrane, a nidus adapted to its propagation, infection takes place and further proliferation follows. No phthisical patient is wholly exempt from this exhausting and impoverishing complication. I regard it as prudent anticipatory therapeutics to administer an antiseptic solution with a view to the immunization of the alimentary canal against this insidious danger. To accomplish this I administer an antiseptic solution in large quantities of water, not less than a quart in twenty-four hours, and preferably more. In addition, it is desirable that the lower bowel be thoroughly flushed twice weekly, sometimes as often as each alternate day, these enemata being also impregnated with the antiseptic solution. The purpose in using large quantities of water is not so much to provide a vehicle for the antiseptic as to obtain the constitutional effect of the aqueous diluent. When the rapid disintegration of tissue, the consequent amount of effete products and the engorged emunctories are considered, an appreciation is formed of the necessity for a full and free solvent to aid in the elimination of accumulated waste by flushing the sewers of the system. As proof of the value of this precaution not a case of diarrhea has developed among the patients treated after this plan.

As an alterative and for the purpose of supplying to the system those constituent elements of the tissues so rapidly wasted by the process of retrograde metamorphosis I use a tablet composed of the bromid of gold and arsenic and the carbonate and phosphate of lime. They have given the best satisfaction of any combination which I have been able to evolve for the purpose.

Cough is usually one of the most annoying features of this disease, but I have had little occasion for a cough sedative. The specific medication allays excessive irritation, liquefies the exudate and facilitates expectoration without effort. There are isolated cases, however, in which a sedative can be used advantageously. This necessity will arise in the inflammatory stage of the disease when there is a dry, irritating cough accompanied by fever. In these cases I have found nothing equal to the coal-tar products combined with 1/4 to 1/8 grain of codeia, preferably administered at the height of the pyrexia. The new product, heroin, prolonging respiration and acting as a quietant to bronchial irritability without depressing effects upon the heart or the central nervous system, may also be used, a convenient form being a 1/12 grain tablet. I am favorably inclined to the liberal use of mild counter-irritants over the seat of tubercular infiltration or consolidation in any stage, but particularly in the inflammatory conditions. When the inflammation is persistent I employ small fly blisters, finding them efficient when milder means disappoint.

Some patients will be more or less disturbed for the first few days by headache and dizziness. In such cases a catarrhal condition of the nasal passages will be found. The local stimulating effect of the germicidal-antiseptic vapor on the inflamed nasal or post-nasal membrane produces this disagreeable sequence. For relief, these cavities should be thoroughly sprayed with an oily mixture two or three times daily until the symptoms subside.

The time required for the realization of the specific value of the vapor treatment varies, in different cases, according to condition, diathesis and susceptibility, the minimum period of subjection being six weeks. Scarcely two persons respond to treatment alike. Some advanced stage cases yield more readily and promptly than those in the earlier stages, but those of the incipient and first stage may reasonably be expected to recover more quickly and with a greater degree of certainty. Marked improvement may be experienced within from four to six weeks, and the progress made during that time will form a safe basis of estimate for the probable necessary period of treatment.

TUBERCULOSIS.

ABSTRACTS FROM THE PROCEEDINGS OF THE CONGRESS FOR THE SUPPRESSION OF TUBERCULOSIS, HELD IN BERLIN, MAY, 1899.*

DISTRIBUTION AND IMPORTANCE OF TUBERCULOSIS AS A DISEASE OF THE PEOPLE.

DR. KOEHLER, director of the Imperial Health Office, Berlin—The nature of tuberculosis is such that not all of the cases come under observation in the earlier stages. Therefore, there is necessarily some inaccuracy in the statistics thereof; those for the mortality from the diseases in question are somewhat more accurate. Still, there are misleading factors here. Bronchitis, pneumonia and other intercurrent maladies are frequently charged with deaths that are in reality to be attributed to the "white plague." It causes more deaths than the statistics show, which is especially true in infants. In 20 to 33 1/3 per cent. of all people dying of other diseases, evidence of healed or latent tuberculosis is found post-mortem. In Germany the number of adults over 15 years of age who seek hospitals by reason of tuberculosis each year amounts to 226,000. It is a disease of all races; Mongolians are subject to it; all the Malay and Negro races have it. Statistics from the United States show that the colored population have double as much consumption as the whites. The death-rate of the City of Mexico and Rio de Janeiro is high, while Buenos Ayres has a small mortality. The British army reports show the following facts. In the East Indies the mortality-rate from tuberculosis is somewhat lower among the natives than among the British troops; among the Europeans it was somewhat lower than among the British soldiers in England. In the West Indies, European soldiers showed a lesser mortality than the non-Europeans. The native troops in West Africa suffered extremely from this disease.

In North America the cities with large ocean-harbors show most tuberculosis, and the western cities least. Melbourne, Australia, does not have much, but Cairo, Egypt, shows a large tuberculosis death-rate; that of Algiers is low. Taking the

* Made by W. A. Evans, M.D., Wm. Becker, M.D., and A. Kreikenbaum.

statistics for phthisis only, the countries of Europe rank in ascending order of prevalence as follows: Great Britain, Norway, Belgium, Italy, Holland, Denmark, Ireland, Switzerland, Germany, Sweden, France, Hungary, Austria, and Russia most of all. Among cities the death-rate from tuberculosis increases as we go along the following list: Buenos Ayres, Naples, London, Amsterdam, Hamburg, Berlin, Warsaw, New York, Rio de Janeiro, Paris, Budapest, Vienna, St. Petersburg and Moscow.

Altitude is probably not of prime importance. The death-rate in mountainous Norway is only a trifle less than that of the lowlands of North-east Prussia and the Netherlands. Alpine Switzerland shows a greater death-rate than ocean-washed England. Comparisons of various portions of Austria and Prussia are confirmatory of this view. Moisture of the air is of great importance. In the north temperate zone, March and April show the largest tuberculosis death-rate; August and September the least.

The statistics of England and of Berlin show that prior to 20 years of age females are more subject than males; at 20 years the rate in men passes that in women. In Berlin the death-rate of tuberculosis is between the ages of 60 and 70. Berlin shows a maximum between 40 and 60; England and Wales, between 35 and 55. In Belgium the maximum years are betweent 15 and 60; in Italy, 20 and 40.

When we inquire what part of the total death-rate is due to tuberculosis in any given year of age we find another series of figures to consider from this standpoint: In Germany the ages 20 to 30 rank first; in England males 20 to 35, females 15 to 25. In Germany of those who die annually between 15 and 60, 87,600 die of tuberculosis, or 300 for each 100,000 inhabitants—one-third of the total death-rate of these ages. These are the years when the citizen is of value to the commonwealth; the loss is incalculable. The hygienic conditions of the cities tend to the spread of tuberculosis, and certain industries are favorable to its dissemination. In the agricultural regions such as East and West Prussia and Pomerania its death-rate is 150; Rhenish Prussia, which is chiefly industrial, shows 290; agricultural Saxony, 190; Westphalia, 310. Beevor's statistics show that the disease can be limited wherever intelligent effort is made.

The following are suggested as proper methods for treatment and prophylaxis:

1. Asylums for the hopelessly sick.
2. Sanatoria for the remediable cases.
3. Disinfection of streets, buildings, public places and public conveyances.
4. Education of the people.
5. Improvement of the general physical tone and stamina.

HEREDITY, PREDISPOSITION AND IMMUNITY.

PROF. F. LOEFFLER, Greifswald—The belief in the inheritance of tuberculosis was general until Koch's discovery. It is now recognized as a strictly infectious disease. In order that the theory of heredity should exist, it is necessary to prove the possibility of transmission of the bacillus from parent to child. Pasteur demonstrated that the silkworm disease could be transmitted from the "fly" through the ovum to the worm. The heredity of syphilis has been proved, and anthrax has been shown to pass from parent to off-spring. If it is possible with these bacteria, why not with tubercle bacilli? An argument in favor of this as a potent possibility is tuberculosis in infants; in inaccessible localities such as bones and joints; in the prominence of tuberculosis about puberty, the explanation being that circumscribed foci of latent tuberculosis had at that season opened up as centers of more general infection. Against this is the fact of the rarity of congenital tuberculosis, the increase of tuberculosis as the age of the individuals increased. If certain families were decimated by tuberculosis, it was because of the greater danger of contagion in such family circles. Johne was the first to demonstrate congenital tuberculosis positively; this was in a calf. Congenital tuberculosis in man and in animals has been proved beyond a doubt. However, congenital tuberculosis only occurs when the maternal parent was affected with advanced tuberculosis to which she succumbed in a short time after the birth of the offspring. Transmission of tuberculosis from the father has never been demonstrated, even when the disease is general or when bacilli are in the spermatic fluid. Tuberculosis is never transmitted through an infected ovum or an infected spermatozoon, but by means of the placental blood. The number of cases of certain congenital tuberculosis is very small. Hauser concludes that, at the highest, 10 per cent. of the babes of mothers suffering from grave general tuberculosis can be reckoned as tuberculous. This percentage is beyond question too high. Consequently, hereditary or congenital tuberculosis has no practical importance.

Many clinicians are of the opinion that a certain susceptibility is inherited from generation to generation, that a bacillus entering such a body would produce the disease, that in this sense tuberculosis was a hereditary disease, and that such a disposition could be recognized by a flat chest, pale transparent skin, narrowing of the arterial system and a degenerative quality of the tissues. There is no doubt that certain abnormal developments of the body and especially of the thorax do increase the liability to tuberculosis. But the fact of descent from tuberculous parents does not per se involve a special susceptibility to tuberculosis. The offspring of artificially tuberculous animals develop just as vigorously as those of healthy animals if they are protected after birth. Bernstein reports a careful study of six cases showing that the cause of tuberculosis in the children of tuberculous mothers is contact and not inheritance. Statistics from sanatoria show that tuberculosis does not run an especially fatal course in patients some of whose ancestors had died of tuberculosis. Turban's statistics show that of those patients whose ancestors had had tuberculosis 49.6 per cent. were cured; of those whose ancestors had had no tuberculosis 44 per cent. were cured. The Davos statistics point out that of those with tuberculosis on the father's side 42 per cent. were cured, with tuberculosis on the mother's side 42 per cent. were cured, with tuberculosis on both sides 60 per cent. were cured; in patients where both parents were themselves tuberculous 50 per cent. were cured. All these observations tend to show that no specific disposition to tuberculosis exists. Clinicians have tried to classify their patients into highly susceptible, moderately susceptible, and insusceptible; but this is entirely arbitrary. The number of bacilli entering the organism is very important; there is another very important factor, viz., the virulence of the bacilli. Vegales procured tubercle bacilli in pure culture from various sources. These were injected into guinea-pigs and rabbits. The disease induced in the guinea-pigs was very uniform in virulence, while in the rabbits there was a great variation. These experiments show conclusively that there is a difference in virulence of bacilli, and it explains the manifold clinical experiences, showing difference in severity and malignancy of tuberculosis.

We will next consider co-called acquired susceptibility or disposition. In my opinion we can not doubt the possibility that after the devitalization of the tissues consequent on many diseases the tubercle bacillus will find it easier to become established; often we can not decide whether the disease is a recent infection or merely an old infection made manifest. It has been stated that certain conditions render a man immune, e. g., kyphosis, emphysema, heart disease, coal-heaving, etc. Consumption is unknown in the dweller in the desert, but whenever he leaves the desert he becomes very susceptible. The racial immunity formerly claimed has not been proved. We therefore do not know of a natural immunity. The question of artificial immunization must soon be solved, by reason of the number of experimenters engaged and the vast amount of experimental work.

The conclusion, since congenital tuberculosis is of no practical importance; since the inheritance of certain devitalizing abnormalities of constitution can not be avoided; since infectious diseases that tend to lower the resisting powers can not be avoided, there remains only one way to combat the disease, namely, the careful destruction of the bacilli wherever found, and especially in the excretions. Initial cases are treated in sanatoria, incurable cases should find refuge in special hos-

pitals in order to separate them from the healthy population. Only when the same attention is given to advanced cases as to the beginning ones, can we limit the mighty devastations by tuberculosis.

PROPHYLAXIS OF TUBERCULOSIS IN HOSPITALS.

DR. VON LEUBE, Wuerzburg—Proper prophylatic measures will prevent spreading of tuberculosis in hospitals. These measures are prophylactic and not difficult of execution. In the first place is, the strict enforcement of the rule that patients must always expectorate into cuspidors where bottoms are covered by water. Another important measure is that patients must hold a bunch of cotton before the mouth when coughing. The body and bed linen must be frequently changed and disinfected, and the floor "wiped up." The clothes of the dead must be sterilized or destroyed. Attendants must wear gauze over the mouth whilst in the wards. The patients are to bathe daily. Physicians and attendants must wash their hands in disinfecting solution after each service. Under such proper precautions tuberculous patients can be kept in general wards with reasonable safety. However, it is advisable to put tuberculous patients in a separate consumption ward. This should be the airiest and best in the hospital. It should be provided with verandahs and there should always be resting pavilions on the grounds.

FOOD STUFFS.

DR. RUDOLPH VIRCHOW, Privy Councilor, Medical Councilor, and Professor in Berlin—Every infection must arrive from without, and we necessarily study the routes by which an infection comes to us. We have arrived at the conclusion that tuberculosis is an infection and foods are one of its routes.

The hog is very frequently tuberculous, and has always been under suspicion. Cattle are much more dangerous; under certain conditions, however, the meat from tuberculous cattle can be safely eaten. Even in human pathology the tendency of tuberculosis is to localize itself and leave the balance of the body unaffected. Accordingly, the present German laws allowing the eating of healthy portions of tuberculous cattle satisfy the demands of science.

Milk is of far greater importance, and, likewise, does not always contain tubercle bacilli when the tuberculosis is in regions away from the udder. Hence, there are cattle which have the disease and yet furnish healthy milk. Many years ago I demonstrated that cows with tuberculous udders gave milk that contained tubercle bacilli; this is of the greatest importance, from a dietetic standpoint. The sterilizing of tuberculous milk has value, but it can not always be relied on. The surest procedure is to kill the cows; all other measures are palliative and will be disappointing. I would not urge this point so strongly were it not for my experience with trichina. You know that I led this fight, whilst the meat vendors and consumers opposed it. However, it has been successful and inspection for trichina is now international. I do not hesitate to say that the more I study this question the more I am convinced that we shall find no help other than by slaughtering the diseased animals. In tuberculin we have a diagnostic agent of great value, but even the restrictions that it makes possible are not enough. Every year I see a larger number of representatives elected who are ready to advocate the slaughter of all diseased animals. If you would assist, much more could be accomplished. Hogs should be better inspected; all the diseased ones are, as should be, carefully removed.

No especial restrictions need be placed on the poultry trade. We must do something to prevent so general an infection of the people. Until lately a certain dogma was considered indisputable, namely the dogma of inherited tuberculosis. I now definitely dispute this inheritance. For a number of years I have held that if one examines the bodies of the still-born no tuberculosis can be found; tuberculosis must come from the outside. What shall we do to protect the children? Such prophylaxis must commend itself to mothers, to hospitals and to orphan asylums.

TUBERCULOSIS AND TRAUMATISM; VIRULENCE OF THE BLOOD IN TUBERCULOSIS.

PROF. LANNELONGUE and PROF. ACHARD, Paris—Max Schuller pointed out that contusions of joints would result in joint tuberculosis when a patient had general tuberculosis or if tubercular infection was occurring at some point remote from the joint, and that this was true of infections other than those of tuberculosis. Schuller's work was done in 1880 and is therefore questionable.

For this and other reasons, the authors have undertaken some experimental work along this line. They inoculated animals by various routes: subcutaneously, intraperitoneally, by the trachea, and through the blood. The traumatism was sometimes produced before the inoculation, sometimes at the time of the infection, and at other times after varying intervals. The injuries were in the joints, dislocations, epiphyseal separations and fractures. The results were negative in 30 guinea-pigs. In 35 rabbits, 30 showed no tubercular arthritis, 5 did. These 5 were inoculated with large doses of impure products, sputum and tissue intravenously, and the traumatism was made simultaneously. The rabbit is naturally resistant to human tuberculosis, but nevertheless so many bacilli can be introduced into the blood that some can reach the injured tissue in spite of the rapidity with which the blood-cells take them up. This latter observation was made by Borrel. Another factor is, the animal will live long enough to allow the lesions to develop. When traumatism occurs in the course of a slowly evolving tuberculosis, tubercular arthritis does not occur.

Villimen, in 1868, determined that the blood of a cadaver dead of tuberculosis was infectious. In this case the bacilli probably passed into the blood in the agony of death. The blood of six guinea-pigs dead of tuberculosis caused tuberculosis five times when injected into guinea-pigs. Three guinea-pigs having generalized tuberculosis were quickly killed and their blood injected into healthy pigs; no tuberculosis resulted. In the human subject with tuberculosis the blood is seldom virulent; the bacilli seldom get in the blood and never in large number and an area of traumatism has every chance to escape infection. Fractures in consumptives not only do not become tubercular, but healing is not delayed. This is in sharp contrast to syphilis, in which the blood is virulent.

In consumptives subcutaneous injections of sterile liquids do not produce specific nodules. The contrary is true in such infections as staphylococcus, streptococcus, pneumococcus, and typhoid. Subcutaneous injections of sterile solutions—methylen blue, sugar—to the number of 118, did not give one tubercular lesion; abscess followed twice in injections in typhoid, once in pneumonia and once in erysipelas. With a tuberculous man, something more than trauma, however violent, is necessary for tubercular osteitis. The offending influence must be prolonged.

TUBERCULOSIS OF DOMESTIC ANIMALS AND ITS RELATION TO THE SPREAD OF THE DISEASE IN THE HUMAN SUBJECT.

DR. BOLLINGER, Munich—Tuberculosis of cattle and swine is of the utmost importance: 1, Because it is prevalent, 2, because of the danger to the human subject. Tuberculosis of other domestic animals is, practically speaking, of little importance.

Tuberculosis of cattle is characterized by slow progress, slight inclination to acute generalization, by the frequency of nodules on the serous surfaces, the infrequency of cavity formation in the lungs, the relatively slight importance of mixed infection, and by the slight influence on the general nutrition of the animals. As in human tuberculosis, it is difficult to say positively whence and how the infection came; in the majority of instances it can only be guessed at. The milk is a prime factor as a spreader, and the excretions of diseased lungs are also potent.

Statistics show great variance in the prevalence of tuberculosis according to the age and the sex of the animals. Milk cows of mature years furnish much the largest percentages of tuberculous animals. This point is of cardinal importance to man. Statistics for Bavaria in 1895, 1896, 1897 show as follows: tuberculosis in calves, .03 per cent.; in yearlings, 15 per cent.; in bulls and steers, 3.1 per cent.; in oxen, 4 per cent.; in milk cows, 11 per cent. Statistics also demonstrate that tubercu-

losis among slaughtered grown animals is on the increase. In Baden from 1888 to 1897 the percentage increased from 1.6 to 3.56; in Leipzig from 1888 to 1897 the percentage increased from 11 to 36.8; in Schwerin, from 1886 to 1893, it increased from 10 to 26; in Chemnitz, from 1896 to 1898, percentage increased from 20.8 to 25.2. In middle Europe there was very little bovine tuberculosis up to the middle of this century; rapid increase has taken place in the last twenty years. If we think of it for a minute there is but little difference between the hygienic conditions of stock kept in stalls and men in prisons. According to some observations made at Munich slaughtering house, cattle from the Alps and from the Hungarian steppes show but little of the disease; the Siedenburger cattle show almost none. The Swiss observations are confirmatory.

To the writer's mind the human tuberculosis plays a subordinate rôle in the etiology of bovine tuberculosis. It is more abundant in hogs than it is in cows of the same age. Swine tuberculosis tends to a general spreading throughout the body. It may affect the lungs, the liver or spleen, with or without involvement of the lungs. It seldom tends to cavity or ulcer formation or to invade the pleura or the peritoneum. Glandular involvement is prominent. In the distribution of the lesions it is very closely akin to the same malady in infants. As there are no ulceration processes in the lungs, hogs are less dangerous to their pen-mates than are cattle with the same disease. Nearly all observers agree that in swine it is mostly due to feeding with the milk of tuberculous cows. The etiological relation between tuberculosis of cows and swine is undebatable. Its prevalence in swine is a safe criterion of the danger to the human race from bovine tuberculosis, especially to those who drink milk. In north Germany in 1895 to 1897 from 3 to 6 per cent. of all hogs slaughtered were tuberculous. In Bavaria for the same years the percentage was 2.2. In the last few years, in north Germany, it has been found that of the hogs that were raised on creamery skim-milk, from 60 to 100 per cent. were tuberculous when slaughtered.

It has been proved that the tubercle bacilli can penetrate the mucosa without antecedent or succeeding changes therein. Often there is involvement of the lymph-glands, of the liver, spleen, kidney or lungs without any demonstrable port of entry. The danger from caring for tuberculous animals is small. Of far greater importance is the possibility of direct intestinal infection through milk and meat. This method of infection surely plays a part in the etiology of human tuberculosis. However, it is much less an etiological factor than is inhalation.

Raw or improperly cooked meat that is either infected, or located near or has touched infected organs, is dangerous. This means of infection certainly occurs more frequently than is generally supposed. Meat from a tuberculous animal, in which infection is local or in the initial stage, is not dangerous if the animal appears in good health and the meat has been properly selected and handled. In well-advanced, generalized tuberculosis the meat is beyond doubt pathogenic unless it has been thoroughly cooked. It can be regarded as certain that milk from cows with tuberculous udders is highly dangerous. According to Bang tuberculosis of the udder is present in 1 per cent. of all tuberculous cows. The milk from infected cows with sound udders has been proved to be infective in 50 per cent. of the cases. Not only in general but also in localized tuberculosis in cows with sound udders the milk may be dangerous. All the products of tuberculous milk are infectious. Such milk is especially dangerous if used in large quantities for a long time without being boiled. The danger is increased if this milk is the exclusive diet. Dairy milk, and especially creamery milk, is as a general proposition safer than the milk of a single cow.

Bang, by feeding calves with tuberculous milk, produced a glandular tuberculosis, especially marked in the pharyngeal and mesenteric glands. Bollinger produced experimental tuberculosis in swine 20 years ago, it being most manifest in the mesenteric glands. In 248 tuberculous children Hiller found the mesenteric glands affected in 45.5 per cent. He concluded from this fact that infectious milk plays an important rôle in infants. Lutz showed that 68 per cent. of the tuberculous children treated at the Munich clinic were from non-tubercular parents. He concludes that ingestion and inhalation were the prime etiological factors. The increase in the prevalence of bovine tuberculosis and that of children certainly have some relation. The method of infection in infants, by reason of surveillance to which they are subjected, is much more possible of accurate observation and conclusion that it is in the adult. Tuberculosis in cattle by reason of its great distribution and latent course is very difficult of solution. Without the co-operation of the stock-owner it will be impossible to eradicate it. He must see that it is to his interest as well as to that of the consumer.

Milk should always be boiled. In creameries, only such cows should be used as do not react to tuberculin. Against the danger from milk products, such as butter and cream, we have no adequate means of protection. When we compare the government's effort to suppress tuberculosis with its efforts in other directions, e. g., against cholera, trichinosis, smallpox, adulteration of milk and other foods, we must conclude that all that has been done is in painful disproportion. The most dangerous milk from an infected udder may be sold without molestation, while the comparatively harmless mixing of milk with water is severely punished. Even if tuberculosis of domestic animals is not the most important cause of consumption in man, it is, by reason of its enormous distribution, great increase and etiological relation, the most important of all animal diseases and the most dangerous to man, and it demands the most serious attention.

RELATION BETWEEN ENVIRONMENT AND THE SPREAD OF TUBERCULOSIS.

DR. KRIEGER, Privy Councilor, Medical Councilor and Medical Reporter in the Ministry for Alsace-Loraine—The great difficulty in determining etiologic factors in this disease is time that elapses between exposure to infection and detection of the disease. All physicians are agreed that wounds or other diminution of vitality of certain tissues, for example, the lung, aid in infection.

There is an uncertainty as to whether there is such a thing as a general increase in the susceptibility. The consideration of statistics is open to two sets of errors; 1, errors in the statistics; 2, errors in the deductions to be drawn therefrom. Statistics show a predominance of the disease in large cities and manufacturing districts. It is found most prevalent among the poor, though occasional statistics have shown a preponderance among certain wealthy people. Poor nutrition is a minor factor in the etiology of tuberculosis. It is more important in therapeutics and in prognosis. A more important factor in causing a lesser amount of tuberculosis among the rich is their better dwellings, less crowding and the comparative isolation of those diseases.

All observations show that the great factor in the spread of tuberculosis is improper handling of the sputum. This reaches a causative maximum in the homes of the poor, the factory, and the workshop. Comparisons show that the curve of tuberculosis ascends with that of density of habitation. In the Imperial Penitentiary at Ensisheim, in Alsace, no new infection with tuberculosis occurs since cleanliness was observed and strict isolation of tuberculous people has been practiced. Now, there is less tuberculosis in this prison than in the neighboring village of Ensisheim.

Collected from a large territory statistics and individual observation teach us that sunlight and air are prime factors in making habitations healthy. There is less tuberculosis in high altitudes. It is only hypothesis as to whether this is due to the effect of the rarified air on the body, or to the thinness of the population and the absence of factories, or to the ease with which these relatively heavy germs settle in thin air, or to the few bacteria of any kind present. Owing to the tardiness with which demonstrable lesions follow infection, statistics on the effect of seasons have slight value.

Some occupations furnish instructive etiologic factors. The death-rate among sisters of charity and Protestant sisters of

mercy is very great. The statistics of a certain English asylum on this point are of little value, because the changes in the personnel were too frequent. Statistics as to physicians are likewise of little value, because of the transient exposure in their work. German statistics show frequent tuberculosis in nurses and servants in consumption hospitals. Among the Prussian nurses the death-rate from tuberculosis has fallen from 10 per cent. in 1887-88 to 6.7 in 1893-94. This is due to the better use of preventive measures. The great proof of the danger of nursing is in the legions who have contracted tuberculosis from nursing members of their own families.

Dusty occupations make people prone to the disease under consideration. The statistics of Berlin as to street-cleaners, cabmen, coal-workers and miners show this. Farmers have little of this disease in spite of the fact that in winter grain-cleaning is dusty. Metallic dust is most harmful; mineral and vegetable dust less so. Efforts at the suppression of dust in factories, such as the use of fans, exhausts, and wet grinding have decreased the death-rate from tuberculosis. Locksmiths, stonecutters, shoemakers and carpenters are prone to tuberculosis, because their customary bent attitude prevents proper pulmonary inspiration and expiration. This is also true of tailors.

Beneke determined that the lungs of consumptives are large and their hearts small. The average relation in consumptives was 12 to 1. In patients with cancer 6 to 1.

SERUM DIAGNOSIS OF TUBERCULOSIS.

PROF. S. ARLOING and DR. P. COURMONT, Lyons—We have written on this subject, setting forth most of the following facts, for the Academy of Sciences in 1898, and for the Paris Tuberculosis Congress in 1899.

1. *How to Obtain Homogeneous Cultures of Tubercle Bacillus in Liquid Media*—It is possible to make Koch's bacillus grow in various liquid media, especially glycerinated media in a homogeneous fashion. Such cultures show an even turbidity, with the bacilli isolated. The bacilli have slight mobility. The principle necessity is daily agitation of the culture. A culture which has acquired this new appearance in bouillon will speedily return to its old type if allowed to age or if it is not shaken daily. On the other hand, after a few generations, the new characteristics become fairly well fixed. When such bouillon cultures, with the new type fixed, are planted on glycerin-agar, at the end of a few days we get a creamy smooth layer rather than the wind-row arrangement that is usual. Such cultures lose their staining peculiarities, and are easily decolorized by acids. It is very necessary to grow the cultures exactly right in order to get reliable results.

2. *Obtaining Proper Cultures*—The best medium is beef or veal bouillon containing 1 to 2 per cent. peptone and 6 per cent. glycerin. The cultures must be agitated at least once a day. Cylindrical flasks with flat bottoms are preferable. Such bouillon is inoculated with a definite quantity of a vigorous culture one month old. The tests are made with bouillon cultures eight to twelve days old.

3. *Technique.*—Certain precautions, not required for typhoid tests, are necessary here. The "loop" must be taken from the upper part of the culture. Serum is preferable to the entire blood; uncolored serum is better than that containing hemoglobin, and fresh serum should be used rather than that which is old. The serum is obtained by allowing the clot to retract, or by centrifuging. We mix three lots of serum in the following proportions: One drop of serum to five of culture; one to ten; and one to twenty. The mixture is drawn into tubes of small lumen, inclined at an angle of 45 degrees, and allowed to stand from two to twenty-four hours. Examination is made with the naked eye and with the microscope. To the naked eye the mixture is clear; the bacilli are along the glass, mostly at the bottom. Examine at the end of two hours and again at the end of twenty-four. Have an unmixed culture similarly arranged for purposes of comparison. Now, carefully take a drop of the serum mixture from near the zone of precipitated culture and make a microscopic preparation. Compare with a slide of an untreated culture. It is advisable to keep some serum from a tubercular pleurisy or peritonitis always on hand to act as a check on your tests.

4. *Artificial Production of Agglutinating Power*—The authors produced this agglutinating power in serum of dogs, goats and guinea-pigs by inoculating them with mild cultures of tubercle bacilli. Virulent cultures producing exudative forms of tuberculosis did not give this modification of the blood-serum.

5. *Clinical Application*—All of the precautions enumerated above are absolutely necessary. Our studies have been going on since May, 1898, and they extend over two hundred patients who were tuberculous, otherwise diseased, and healthy.

The agglutinating power of blood-serum was tried on 186 patients. Of these, 128 gave a positive reaction, 69 per cent.; 58 gave no reaction, 31 per cent.; of these 128, 96 were proved to have tuberculosis by physical examination, sputum examination, or autopsy, 75 per cent; and 32 gave no evidence of tuberculosis other than this agglutination, 25 per cent. Of the 58 cases giving no reaction, 10 were otherwise proved tuberculous, 17 per cent., and 48 gave no sign of tuberculosis, 83 per cent. Of the 106 certainly tuberculous 91 per cent. reacted; 9 per cent. gave no reaction. The 96 reacting cases showed all degrees of the disease. Of the 10 not reacting 7 were most advanced cases. The milder cases react best. Of the 60 clinically non-tuberculous patients, but having various other diseases, 26, or 43 per cent., reacted; 34, or 57 per cent., did not react. Of these 26 reacting cases, autopsies were held on 20. Of these, 20, 9 had latent or cured tuberculosis, 45 per cent. The reaction in clinically non-tuberculous cases probably indicates latent tuberculosis.

Comparison is made with the statistics of Beck as to the reliability of tuberculin as a diagnostic agent. Beck found that 60.8 per cent. of all sick people, tuberculous and otherwise, responded to tuberculin. Our similar serum trial showed that 69 per cent. responded. Beck examined 371 clinically tuberculous patients: 100 per cent. responded to tuberculin. Of our clinically tuberculous cases 91 per cent. responded to the serum-test. Beck examined 2137 clinically non-tuberculous sick people; 1194, or 54 per cent., responded to tuberculin. Among our similar cases 43 per cent. responded to serum.

Differences in the patients examined are responsible for the differences in the figures; the results are, in the main, strongly corroborative. The advantages of the serum method are: 1, its harmlessness; 2, facility and rapidity; 3, delicacy. Its disadvantage is the number of necessary precautions.

6. *Agglutinating Power of Serums from Tubercular Cavities, e. g., Serum from Tuberculous Pleurisy.*—The results given here are even more accurate than in the use of blood-serum.

General Conclusions.—The use of homogeneous bouillon cultures permits us to use serum diagnosis in tuberculosis. The use of proper technique is imperative. In men the agglutinating doses are from 1 to 5 to 1 to 20. The results of 186 examinations show the test to be valuable. Its results run very nearly parallel with those given by tuberculin. It is especially valuable in cases of latent tuberculosis. It is most valuable in diagnosis of early tuberculosis and least valuable in late, extensive or exudative tuberculosis.

MIXED INFECTION IN TUBERCULOSIS.

R. PFEIFFER, Berlin—The clinical course and the anatomical and histological findings in tuberculosis are irreconcilable with the effects of the tubercle bacillus. Hence, Koch looked for other organisms in tuberculosis besides the tubercle bacillus. He found micrococcus tetragenus, bacillus pyocyaneus and various cocci. He wrote that these organisms were probably benign in lung cavities, or else that they took part in the destruction of tubercle bacilli. The term "mixed infection" was first used by Brieger and Ehrlich in 1884. The term should only be used when two distinct organisms infect a body entirely independently of each other. The infection, by other germs, of lungs already tubercular should be spoken of as secondary infection, as suggested by Petruschky. However, the terms are habitually used synonymously, and I do the same here.

The following have done valuable work on this subject: Babes, Pausini, Cornet, Petruschky, Spengler, Ortner, Ehret

and Schuetz. In 1890 Pausini isolated 24 varieties of organisms in tubercular sputum; his technique was faulty. Koch's method is the proper one: Wash the sputum in many changes of sterile water until nothing remains but the central "core," which, beyond question, came from the tubercular area.

In this central "core" streptococcus is often found, sometimes alone. Less often staphylococcus, diplococcus lanceolatus, bacillus pyocyaneus, Friedlaender's bacillus and micrococcus tetragenus are found. During influenza epidemics enormous numbers of influenza bacilli are found. Ehret and Schuetz have lately added pseudo-diphtheria and true diphtheria bacilli to this list. Streptococci usually predominate. The most frequent combinations are streptococci and staphylococci, streptococci and bacillus pyocyaneus, streptococci and diphtheria bacilli, and streptococci and diplococcus lanceolatus. The organisms causing the secondary infections are found in the tissue as well as in the sputum. Cornet called attention to the fact that in the same lung one cavity might show nothing but tubercle bacilli, another a mixed infection of one kind, and another a mixed infection of a different kind. Ortner studied the tissues in 61 cases of pulmonary phthisis. He studied the bronchopneumonic areas surrounding the clearly tubercular areas. In 28 of 42 cases he found a modified streptococcus present, this he called micrococcus pneumoniæ. Cornet, Petruschky and Spengler verified this work and showed that this coccus was nothing but streptococcus. Micrococcus tetragenus was also found in the tissue. Pfeiffer showed that the lobulocellular infiltrations surrounding the tubercular areas, and found so typically in influenza epidemics, were due to influenza bacillus. Schuetz showed the diphtheria bacillus in the tissue.

Petruschky found that streptococci present in the exudative areas of tubercular lungs had lost most of their pathogenic power for animals. But these slightly virulent cocci might be very pathogenic in lungs of lowered vitality and in cavities of varying hydrostatic pressure. Again, the usually slow course of phthisis shows that none of the organisms can be of great virulence.

A. Fraenkel described a caseous bronchopneumonia due to tubercle bacilli alone. This does not alter the importance of mixed infection very much. Baemuler described certain cases of tuberculosis that progressed slowly up to a certain point; then spread rapidly, just subsequent to hemorrhage. He thought this rapid spread due to inspiration of blood laden with tubercle bacilli and other organisms.

How do secondary bacteria get into the lungs? If Druick was right when he said that various pathogenic bacteria are always present everywhere in normal lungs, then the question is easy. Besser, Klipstein, Hildebrandt and Mueller proved that normal lung tissue and the mucous lining of the smaller bronchioles are always sterile. Even then the contents of the upper air-passages and the surrounding atmosphere are dangerous.

We agree with Struempell that clinically the most important symptom of mixed infection is fever. Fever is always a bad indication, its absence is a good one. Bacillus tuberculosis alone can produce fever; as a rule it does not. The characteristic fever, chill and sweat of phthisis is due to secondary infection. Petruschky says of streptococcus infection: "Suspicion of secondary infection is proper in remittents, intermittents, and in those cases which are subnormal in the morning and reach 38 C.—100.4 F.—in the afternoon."

As a rule the blood of tubercular patients is sterile during life. Petruschky has shown that streptococci can be found in 50 per cent. of the cases of phthisis if the heart's blood be examined post-mortem, but this is due to infection during the article of death.

Examination of the sputum in unmixed infections shows a small quantity and a few tubercle bacilli. Examination of the sputum in mixed infections shows much sputum, many secondary bacteria and sometimes no tubercle bacilli. Petruschky and Spengler sometimes found streptococci in the sputum of afebrile cases. This was exceptional. Here the organisms were in the cavities, not in the tissues. The importance of secondary infections has been determined in tuberculosis of the bones, the joints, the larnyx, and the skin. We can be certain that the prognosis is made worse by secondary infection. The physician must aim to avoid such complication.

TREATMENT OF TUBERCULOSIS WITH SERUMS.

DR. E. A. DE SCHWEINITZ, Washington, D. C.—In 1894 I published a series of experiments in which guinea-pigs were immunized against tuberculosis by injecting them with cultures of tubercle bacilli that had been weakened by years of growth on acid media. This work was verified by Trudeau. With this view I have tried to get a serum from horses, mules, etc. I use an extract of the bacilli that float on the surface of cultures. This is injected in horses for several months. Now the serum is drawn. This serum was tried on guinea-pigs previously inoculated with virulent tubercle bacilli. The guinea-pigs recovered.

Dr. Stubbert, of the Loomis Sanitarium, at Liberty, New York, used my serum for 1½ years, during which time 90 patients were treated with the following results: 19 per cent. were totally cured; 7 per cent. considerably improved; 57 per cent. somewhat improved; 17 per cent. not improved. The improved numbered 75, unchanged 8, and 7 were aggravated. Of the 90 patients 42 were in the early stage, 44 little advanced, and 4 were advanced cases.

Expectoration was diminished in 774, and remained unchanged in 16; cough diminished in 72, and was unchanged in 18; appetite increased in 74, and was unchanged in 16; weight increased in 69, was unchanged in 14, and decreased in 7.

Temperature decreased in 44 and was unchanged in 46; tubercle bacilli were always absent in 11, disappeared in 11, diminished in 32, and remained unchanged in 36.

From these results and my own I am justified in claiming that tuberculosis can be markedly improved and frequently cured with my serum. The pathogenesis of tubercle bacilli may be in some way related to the large amount of fat that they contain. I take cognizance of this in preparing this serum. The production of a tuberculosis serum should be exclusively in the hands of the state for a number of years.

I suggest an international committee on treatment of tuberculosis whose business it would be to investigate remedial efforts against tuberculosis and let the world know the results of such investigations.

Homicide by Carbolic Acid.

A case of some interest was recently before a coroner's and magistrate's court in Toronto, which brought forward the question of homicide by carbolic acid. A citizen was dead on the arrival of a physician who had been summoned hastily. Although four physicians saw the patient in rapid succession, none of them detected the odor of carbolic acid in the room or about the person of deceased. The coroner was notified, and on a post-mortem examination, carbolic acid was found to be the cause of death. Suspicion rested on his supposed wife and a young man who was boarding with them, and their arrest followed, with a charge of murder. No bottle was found which had contained carbolic acid, in the room, and it could not be ascertained where the deceased had got the drug, nor if either of the accused had purchased it. The crown became possessed of the idea that the victim had been administered carbolic acid for a length of time, and the officers of the crown endeavored to prove that such could be possible and that carbolic acid could be administered in some other substance which would disguise its peculiar odor and taste. After dragging along for six weeks, the coroner's court brought in a verdict that the deceased had come to his death by carbolic acid, by other than his own hand. The case was then brought into the police magistrate's court, where it was at once summarily dismissed, and the prisoners liberated. The case, however, brings up two interesting features: Can there be such a thing as poisoning by carbolic acid administered internally, chronic in form, similar to chronic arsenical poinoning for example; and could carbolic acid be given any one in such a form, the odor and taste so disguised, that the person to whom it was given would not know what he was taking?

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TUBERCULOSIS.

The present issue of THE JOURNAL is devoted mainly to the subject of pulmonary tuberculosis, the one disease that is just now foremost among subjects of medical discussion. Probably nothing has stirred up the medical profession at any time during the past century as has Koch's discovery of the tubercle bacillus. The disease we have had always with us and the suspicion of its communicability was not new, but this scientific confirmation of the facts and the practical deductions therefrom have amply warranted enthusiasm. We know now that tuberculosis, which is responsible for so large a proportion of human mortality, is an infectious disorder, and what is still more valuable knowledge, that it can be recognized in its early stages while still curable and that it is to a certain extent preventable. It is natural that, under these circumstances, enthusiasm should be aroused and sometimes extravagance be indulged in even by medical men in their estimation of the dangers of infection. Very little, however, if any, of this tendency will be met with in the papers in this issue.

There are yet many points to be cleared up in regard to tuberculosis, and it may be that some of our present views as to its mode of infection may have to be modified in some respects, but it can safely be said that the papers in this issue fairly represent the present consensus of opinion in regard to it. The more hopeful views of the disease are gaining ground and it is possible that in the future more stress will be laid on constitutional and environmental and less on the bacteriologic factors in its etiology. If we are to accept the statements and views of some modern writers as to the prevalence of cured and latent or quiescent phthisis we must admit that the bacillus tuberculosis is not as dangerous an organism as it has come to be believed by the public, and our efforts directed to strengthen resistance must be generally considered as of more importance than those aimed at merely restricting the infection. One thing seems reasonably certain; pulmonary consumption is, at least locally, on the decrease. This is shown by Dr. Hinsdale's paper in this number, in which he reports a decrease of the percentage of deaths from pulmonary tuberculosis to all deaths in the city of Philadelphia from 14 to 10 per cent. in fifteen years. Other cities, such as Berlin, where statistics are reliable, show a similar decrease, and in spite of possible criticisms, it must be admitted that the registrar-general's statistics for Great Britain give similar testimony. It should be remembered in this connection that with a decrease in the general death-rate there might very easily be a proportionate increase in that from consumption, with an actual decrease. But both the actual and the relative mortality are reduced.

There is much yet to do before consumption ceases to be the "great white plague," the one pre-eminent scourge, but the outlook is now more hopeful than ever before. The public has already received rudimentary education on the subject—a little one-sided perhaps in some regards, but nevertheless one on which to build a more complete and perfect body of information. The occasional, somewhat too hysterical manifestations of some of the antituberculosis agitation are only a temporary phase of the progress toward the desired end—the restriction if not the eradication of the disease among men.

HOSPITAL TREATMENT OF TUBERCULOSIS.

The number of hospitals for tuberculosis is increasing rapidly, not only abroad but in this country. In places where special hospitals have not been possible, wards or wings of general hospitals have been set aside for tuberculous patients. While a special hospital is certainly best, it is unquestionably true, that special wards are better than general mixing of patients. It seems to be true that infection with tuberculosis is much more apt to occur where contact is continuous than where it is casual.

In order to get the best, or even satisfactory results from hospitals, it is necessary to specialize. There should be hospitals for advanced cases of tuberculosis, and others for the cases that promise more from treatment. The question arises: Why should we erect hospitals for the hopelessly sick? The good that they do can not be shown by statistics. The patients usually come from crowded homes and insanitary surroundings. They often come from bedrooms occupied by several people. They pass the day-hours in yards or work places where there is little sunshine and much moisture. Such a patient at home is a constant menace to his family and source of some danger to others. This is the great good that these hospitals accomplish. There are lesser benefits. Many people remain in a hospital a short time and return to their friends. If they remain even a short time they are taught the care of the sputum, the necessity for sunlight and general hygiene, and much good for the community has been accomplished. The cures in a large hospital will never be very much of a factor. Even when cured, the patients will seldom get on such a physical plane as will make them useful to their families or to society.

The second class of hospitals for tuberculosis is the sanatorium for the incipient-stage group. Many hospitals concentrate their efforts as much as possible on

those cases of tuberculosis that can be cured and restored to usefulness. Several of the articles in this symposium and the accumulated experiences of hospitals in many countries show that from 25 to 60 per cent. of people with tuberculosis who are properly treated are cured. When cured, they are strong enough to take their places among the bread-winners or the home-makers.

While the climate of the West and of the mountain districts of the East is especially beneficial, the possibilities of sanatoria are not limited to those districts. Sanatoria in those regions that are supposed to be unfavorable for the cure of tuberculosis show an excellent percentage of recoveries. Porches, verandas, windshields, solariums, etc., can in a great measure replace the conditions found in more favored locations. Some of these hospitals have been built by states or municipalities, some by private charity, and others as business propositions. Each source is legitimate and proper. The duty of the state to cure where it can is no less urgent than it is to care for those that are helpless. The article by Mr. Scruggs covers the point of right, though it is clear that a state has the right to do whatever is its duty.

Unquestionably hospitals will be built on the lines advocated by Dr. Oliver, namely, small hospitals for small communities—serving as sanitary homes for those having tuberculosis to an incurable degree, and being havens of hope for others.

HOME TREATMENT OF TUBERCULOSIS.

The profession is to be congratulated on the progress made in the study of tuberculosis during the last few years. Through better knowledge of the subject, more people recover from the disease, an earlier diagnosis is made in many cases, and a more rational care of the patients has come about. The modern sanatorium management too, we may well believe, offers the best chances for recovery and is destined to still further reduce the general mortality.

But most patients are unable to pay for institution treatment and the state can never hope to provide sanatoria for half of the indigent cases, even if they were all willing to go to them, which is not the case. There will always be a large number of people who will sicken with consumption and recover or die from it at home. These must depend, in the main, on the assistance of their family physicians. Are these physicians doing as well as they can for such cases? Are such cases having as good a chance for their lives as their circumstances and surroundings make possible? We think it is only fair to answer each of these questions in the negative. Physicians are too often careless as to details of hygienic management, on which the life or death of the patient depends. Some seem never to have learned that benefit can come of such measures. Most such patients have no carefully ordered hygienic management, except that which they devise themselves. They are given medicines, usually tonics, such as strychnin, iron, quinin, cod-liver oil and whiskey, all of which in their way are beneficial. They are admonished to eat and to cut down or stop their work, both of which they do in a most empirical and unscientific way. Every patient ought to receive from his physician a carefully prepared schedule of regimen, written out minutely if need be, and to be observed continuously. It should cover all details as to the number of hours daily to rest, and how to do it; the methods of rest out of doors; the kind of room and bed to sleep in; the ventilation for both night and day; the character and amount of exercise; the way to be clothed; the food for each meal, and the number of meals each day —more than three—and the hours they are to be eaten; the care of the stomach and bowels; and the management of amusement for mental tranquillity.

How many cases in a hundred ever have such attention? Yet the life of many a consumptive depends on avoiding some indiscretion which such rigid rules might prevent, and it is attention to just such details as these that makes the remarkable records of the sanatoria. Is it impossible to give the average case some fair approach to such efficient services at home? We prefer not to believe it. The people are ignorant and not to blame if they fail. The physician knows the value of these measures and is responsible. He ought not to evade his responsibility. The home treatment of pulmonary tuberculosis is, we believe, not half as effective as it might be made, and ought to be.

COCAINIZATION OF THE SPINAL CORD.

Although but little more than a year has elapsed since Bier presented his first article on cocainization of the spinal cord as a means of inducing anesthesia for surgical purposes, he has also deemed it necessary to warn against the too free use of the drug in this manner.[1]

He considers the dose of 4 cgs. to 5 cgs., which has been used, as dangerous, and says the dose should not exceed 15 mgs. He holds the problem is not to use cocain in the manner which he first described, and for which he predicts no great future, but to devise means of rendering cocain harmless and to prevent its unpleasant after-effects or to discover some non-toxic substance. He has been working along these lines with some success, but says that all these experiments are not yet concluded, but that they still need to be worked out.

Lest the apparent simplicity of the method may lead to its rash use, it may be well to point out some of its difficulties and dangers. In the first place the solution must be absolutely sterile. As cocain is altered by high temperature, the sterilization must be carried on at a low temperature. This requires much time and care. The solution should be freshly prepared, as the use of an old solution has failed to produce the desired anesthesia. The introduction of the needle amounts practically to

1 Muench. Med. Woch., 1900, xxxvi, S. 1226.

a lumbar puncture, as the solution must not be injected until clear cerebrospinal fluid is seen to escape from the needle. While lumbar puncture is ordinarily a simple and safe procedure, it is not always so, as Gumprecht[2] reports 17 cases of sudden death following simple lumbar puncture for diagnostic purposes. The toxic properties of cocain, when injected elsewhere in the body, are well known, and Bergmann[3] reports a case of the most acute poisoning following the injection of 3 cgs. into the calf of the leg in a man in whom the day before he had injected 5 cgs. into the gluteal region without perceptible symptoms. As a rule, intoxication symptoms follow the injection of cocain into the subarachnoid space. While these symptoms are usually mild and evanescent, they are not always so. Racoviceanu Pitesti[4] reports 125 cases with the following results: In 4 cases anesthesia failed and he was obliged to resort to chloroform; in 2 cases anesthesia ceased before the operation was finished; of the first 100 cases, 17 showed no disturbance; 80 had light intoxication symptoms lasting from twelve hours to five days, while in 3 the intoxication was so severe that life was in great danger. He considers the presence of kidney disease a contraindication and that patients with heart disease and arteriosclerosis require close watching. He concluded that the methods can not take the place of chloroform or ether, on account of its many inconveniences and the inconstancy of the solution.

Tuffier[5] in 125 cases had 5 deaths, 4 of which could not be referred to the anesthetic; the fifth, however, died with symptoms of asphyxia. The autopsy showed mitral insufficiency and two fresh lung emboli. He says the method should not be used in children nor in the hysterical.

It is apparent from these facts that the method is not free from danger, and should be used only with the greatest caution and attention to detail. It would also seem advisable that the indications and contraindications should be more definitely determined and the problems pointed out by Bier be solved by those in position to do so before the method be generally adopted by the profession.

THE HALL OF FAME.

The Hall of Fame, which is to be the American Westminster Abbey, has received its first score and a half of inmates by the suffrages of the 100 judges selected from among college presidents and jurists. The results thus far are interesting in several points of view. There is hardly anyone whose opinion is worth anything who will not, in view of the names selected from and those selected, find something to criticise. As physicians we have a grievance in that, while several eminent men had been suggested, not one of our profession was deemed worthy of a place in this Walhalla. The statement is made on good authority that this is due to the light vote cast for any physician by the chief justices on the jury, and the fact is a commentary on the plan of giving such matters to the decision of members of an elective judiciary. The vote is, we understand, to be published in full detail, and its study will undoubtedly afford much food for reflection.

2 Deutsche Med. Woch., 1900, xxvi, S. 386.
3 Muench. Med. Woch., 1900, xlvii, S. 392.
4 Berl. Klin. Woch., 1900, xxxiii, S. 741.
5 Ibid.

DILATATION OF STOMACH DUE TO COMPRESSION OF DUODENO-JEJUNAL JUNCTION BY MESENTERIC ARTERY, VEIN AND NERVE.

A writer in the *American Practitioner and News* for August, 1900, calls attention to a cause of dilatation of the stomach in visceral ptosis by pressure on the duodenum by the superior mesenteric artery, vein and nerve. He claims to have studied the subject for several years and the paper is illustrated with diagrams and sketches intended to make clear the mechanism. As he found no records in the literature showing that dilatation of the stomach may be caused in this way, he considers his observations as original. There is no occasion to doubt the author's claim that his observations are original in so far as they were made without previous knowledge of similar observations being recorded in medical literature, but his investigations into the literature must have been exceedingly superficial and limited. The subject is dealt with in an editorial abstract in THE JOURNAL xxxiii, p. 487, based on an article by P. A. Albrecht, which appeared in *Virchow's Archiv*, clvi. In this article Albrecht describes two striking and fatal instances of this form of obstruction and refers to similar observations by Glenard, Kundrat and Schnitzler.

DISEMBODIED PRACTITIONERS.

In the State of Massachusetts a medical-practice act, rigid in other respects, exempts from its provisions clairvoyants, mental healers, magnetic healers and those that practice the curing of diseases by the use of hypnotism. In other words, the greater the humbug the greater is the privilege, while any pretense to accurate knowledge must be rigorously investigated. It would seem that the lawmakers reasoned that since a little knowledge was a dangerous thing, absolute ignorance must be safe, a fallacy the more readily adopted since it is a natural tendency of human imbecility to love to be humbugged, as that eminent student of human nature, P. T. Barnum, expressed it. Like the silversmiths of Ephesus, the Massachusetts legislators may also have had self-interest in mind, for does not the great goddess of "Christian Science" reside among them, at least part of the time? In a recent lawsuit it was held that bills for medical treatment by spirits could be legally collected by the individuals through whom these disembodied practitioners acted. No question appears to have been asked as to the qualifications of these ghosts, though the plaintiff only claimed to act as their instrument. Whether such temporary inspiration can properly be accepted under the law, as it appears to have been in this case, may be open to question; at any rate, there is a chance for an interesting legal quibble. If a man is not really himself, or claims not to be, when under such influence, has he the right to practice in the name of another whether that other be living or dead?

Leaving such matters aside, however, it seems a pity that the laws in the region that popularly passes as the center of culture of this continent should be restrictive only on those that have some pretense to qualifications and should offer such premiums to ignorance and superstition.

ALLEGED INSANITY IN THE ARMY ABROAD.

According to some of the sensational journals of the day, it would appear that the American army serving in the Orient was being decimated—if that is the word—by mental disorders. Thrilling statements as to the effects of climate and homesickness have been sent abroad and it would seem quite possible that they have caused serious distress to friends and some concern to well-wishers of our soldiers generally. According to a Washington dispatch, this anxiety is altogether needless. From reports received by the surgeon-general of the army, there have been only 84 cases of insanity last year among the troops in the Philippines, though from newspaper accounts there ought to have been ten times as many. There were, it is said, only 188 cases altogether in the whole army of over 100,000 men, which gives fully as favorable a percentage as we have in any class of our population. Moreover, half of these cases were only temporary results of nostalgia which were quickly recovered from, the most then returning to duty. A specially favorable fact is that the number of cases attributed to intemperance was very small; this has a bearing also on another frequently repeated scandal. These facts are given out in advance of Surgeon-General Sternberg's report, which, it is said, discusses the subject somewhat fully. We see no reason to doubt their reliability.

THE REVIEWING OF BOOKS.

A majority of the book reviews nowadays are favorable. This has led to the statement that literary magazines are "publishers' organs." To this charge the *Chicago Sunday Tribune* for September 30 makes answer. It admits the truth of the statement in the opening line. "The contrast with the slashing of the *Edinburgh Review* is indeed marked, but it by no means follows that the book reviews of the present time are any more a failure than those which flayed Shelley or drove Keats to an early grave." The conditions in the book market are such that but a fraction of the books published can be reviewed, and hence the tendency to select for review chiefly the books worthy of praise, the inferior productions simply being ignored. And then personal animosity and political prejudice no longer play any such part in the reviewing of books as they did a century ago—and this is certainly right. For these two reasons the *Tribune* considers a return to the older methods of "slashing criticism" as undesirable. The conditions in medical literature are not unlike those in the literary world at large. The great number of medical books now issued practically preclude critical reviews of all. Time and space are too valuable to be wasted in giving detailed and critical examinations of all the publications placed on the editor's table; the majority of which are of an elementary and ephemeral nature, not altogether worthless, perhaps, but surely not of such character as to produce any impression on the development of medical science. Many medical periodicals have adopted the policy of acknowledging all books received, selecting only the more important for review. It is natural that under these circumstances the majority of reviews are of a commendable tone. Yet these journals are not, therefore, "publishers'" or "house organs." Let the very fact that a book is chosen for review mark it as one of considerable importance! The standard of the review columns in medical journals should be so high that an author would feel honored when his book is dignified by being reviewed. Reviews of this sort need not be of unreserved praise; dignified criticism is always desirable when offered by competent reviewers in true scientific spirit. "Roasts," on the other hand, are productive of unnecessary ill-feeling, even when bestowed on worthless books that had better be left entirely unnoticed. Managed in this manner, the book departments of medical journals would soon rise to something more than gratuitous advertisements of recent publications without discriminating between the worthy and the insignificant.

SOME STATISTICS OF INSANITY.

A recent study of the statistics of the Hudson River State Hospital for the Insane, by Dr. Charles W. Pilgrim,[1] though covering but a comparatively limited number of cases, presents some features of interest. In the first place, it seems to show that modern methods are productive of better results in the care and cure of the insane than those in the past. From the opening of the institution in 1871 until 1896, a period of twenty-five years, the average recovery-rate was about 21 per cent. on the admissions, and those discharged improved, 11.5 per cent., while, making all due allowances for earlier unfavorable conditions such as the larger proportion of chronic cases transferred to a new institution, the present total exceeds the above average by at least 9 per cent. This, it should be remembered, is an estimate made with the modern conservatism in estimating recoveries, for the old fashion of counting every lucid interval a recovery has of late years been replaced by an extreme caution in this respect. Many of the patients discharged as improved would have been counted without hesitation as recoveries in former years. Another point of interest in this connection is that these statistics support the hopeful view that bad as the outlook usually may be, yet while there is life there is hope in all insanities where there is not indisputable evidence of profound damage to the brain. Eight out of the year's recoveries had been insane for two to five years before reception, and nine had been inmates for like periods. Such facts, and they are frequent in asylum experience, indicate that even chronic insanity may yield to modern methods. An analysis is made by Dr. Pilgrim of the data as to the hour of death, a subject of possibly more popular than scientific interest, but one that is nevertheless worthy of study if only because of the popular beliefs. Dr. Pilgrim found that the most fatal hours of the day were between noon and 6 p.m., 31 per cent. of all deaths occurring within this period. In fact, the highest point of the death-rate in the statis-

1 Am. Jour. of Insanity, July.

ties of the last decade was reached between the hours of 3 to 6 p.m.; the next highest point was between the hours of 3 and 6 a.m., though this was affected by a decided fall between the hours of 4 and 5 a.m., when it went down to the lowest figure in the whole twenty-four hours. These figures therefore show, as Dr. Pilgrim says, "that there is some reason for the popular belief that many deaths occur during the early morning hours, but they show still more plainly that the majority of those who suffer from long-continued mental disease give up their lives toward the close of the day." Still another point noted by Pilgrim, which bears out a popular belief, is that of the return of mental lucidity at or a little before the moment of death. He finds this true in many cases, especially in the insane dying from phthisis or acute intercurrent diseases or injuries that produce a profound shock on the general system. This fact has been often noticed, but, as he says, little has been written in regard to it. A perfectly satisfactory explanation has not been given nor has its psycho-pathologic significance been fully appreciated, possibly because of the difficulties of investigation necessarily involved. Dr. Pilgrim's article is a suggestive one, and indicative of the probable value of more general statistical studies of the kind in regard to insanity.

Medical News.

ALABAMA.

THE BIRMINGHAM MEDICAL COLLEGE began its seventh annual session, October 2.

DR. MILTON B. KIRKPATRICK, Montgomery, has been elected county physician of Montgomery county to fill the unexpired term of J. H. Naftel, deceased.

ST. VINCENT'S HOSPITAL, Birmingham, will not be ready for opening for about two weeks, but a few patients are being received to relieve the strain on the temporary hospital.

CALIFORNIA.

DR. T. EDWARD BAILEY, San Francisco, has succeeded Dr. Walter S. Thorne as chief physician and gynecologist at St. Mary's Hospital.

DR. ISADORE E. COHN, Berkeley, as a result of a competitive examination, has been appointed third assistant physician of the Napa State Hospital for the Insane.

THE ALAMEDA Board of Health is framing an ordinance for presentation and passage which will make it a misdemeanor for any undertaker to handle a dead body without first securing the physician's certificate.

COL. A. C. GIRARD, chief surgeon at the Presidio Hospital, has declined the position of chief surgeon, Department of the Lakes at Chicago, on the ground that the duties of his position in Chicago would be mostly office details, while in his present position he has great opportunities for surgical work.

ONE of two helminthologists who crawled into Los Angeles from Mexico some months ago, was fined last week $50 for practicing medicine in Long Beach without a license. He had already paid two $100 fines to the city for the same offense. He was let off easy this time on the promise of leaving the country.

COLORADO.

THE NEW building of the County Hospital at Colorado Springs is completed at a cost of $25,000.

DR. FREDERICK E. WARREN and Miss Ida M. Miller, both of Denver, were married at the country home of the bride's parents, October 3.

THE ST. LUKE'S HOSPITAL AID SOCIETY, Denver, reports that during the year, 1010 patients were treated in the hospital and that eleven nurses were graduated from its training school.

DENVER'S MORTALITY for September was 58, a death-rate of 13.13 per thousand per annum. The births for the month numbered 114. Twenty-one cases of smallpox, 17 of scarlet fever and 40 of typhoid fever were reported during the month.

DISTRICT OF COLUMBIA.

THE PROVIDENCE HOSPITAL medical board, on October 2, elected Dr. Middleton F. Cuthbert, gynecologist and Dr. Joseph S. Wall a member of the medical staff.

THE HEALTH OFFICER of the District reports 108 deaths for the week ended October 4, a death-rate of 20.16 per thousand per annum. During the week 15 cases of diphtheria and 6 of scarlet fever were reported.

THE INTENDANT of the Government Hospital for the Insane has transmitted to the commissioners a report for the fiscal year ending June 30, together with estimates for maintenance and improvements for the following year. The total estimate for the above amounts to $210,600, and $22,753 for salaries and operating expenses. The value of farm produce raised during the year was $6376.98.

HOWARD UNIVERSITY MEDICAL DEPARTMENT held its opening exercises at Freedmen's Hospital, October 1. Prof. Hodgkin, of the dental department, made the opening address.

THE GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE opened its fall term October 1. Dr. George L. Magruder, dean of the faculty, presided and announced the following changes in the faculty: Dr. John F. Moran, professor of obstetrics, vice Dr. Henry D. Fry, resigned; Dr. Isaac W. Blackburn, who has been ill for two years, resumes his duties as professor of pathology and morbid anatomy.

ILLINOIS.

DR. FRANK B. FISHER, Springfield, was married October 3 to Miss Carrie Furber at Carlinville.

DR. WILLIAM J. CHENOWETH, the oldest practitioner in Decatur, has gone to California, where he will reside for the future.

THE STATE BOARD OF HEALTH has decided to carry its case against Dr. W. Frank Cross, charged with unprofessional conduct in connection with medical colleges, to the Supreme Court.

Chicago.

DR. JAMES NEVINS HYDE has returned from a trip to Norway.

DR. GEORGE W. WEBSTER has been appointed a member of the Illinois State Board of Health, to succeed Dr. R. F. Bennett.

DR. SARAH HACKETT STEVENSON has returned from her trip to Europe, which included the congress in Paris and the Passion Play at Ober-Ammergau.

THE REGULAR quarterly medical examination closed October 11. Forty-one persons took the examination, twenty-seven of whom are candidates for physicians' certificates, eight for certificates of midwife, and six are classed under the head of "other practitioners."

DR. ARTHUR R. REYNOLDS, secretary to the Galveston Relief Committee, returned from his tour of investigation in Texas, October 15. He thinks that the contributions from Chicago public schools should be applied to the replacement of the public school system in Galveston.

A NUMBER of Chicago "Doctors" who have bought diplomas from the Metropolitan Medical College, or have in other ways violated the laws governing the practice of medicine, have been arraigned by the State Board of Health, which is now making a vigorous war against illicit practitioners.

MORE THAN 130 medical societies thus far have appointed representatives to attend the Fenger banquet. Dr. Charles A. L. Reed, Cincinnati, will be toastmaster; and Drs. Joseph M. Mathews, Louisville; Charles A. Wheaton, St. Paul; Charles B. Nancrede, Ann Arbor; Nicholas Senn and others will be among the speakers.

ERRORS in the form of the instructions given the jury in the Superior Court have brought a retrial of the X-ray suit, in which Frank V. Balling, the plaintiff, was awarded judgment. The suit was the result of the application of the rays to Balling's ankles by Dr. O. L. Schmidt and W. C. Fuchs, Mr. Balling declared that in consequence he was compelled to submit to three painful amputations.

HEALTH DEPARTMENT.

The recorded deaths for the week ended October 13 numbered 449—an increase of 51 over the previous week and of 30 over the corresponding week of 1899. This increase is not so serious as was apprehended in the Bulletin of October 6, as a result of the sudden change of temperature at the close of that week. In fact, the increase is in deaths from diseases with which—except as to diphtheria—the weather has little to do. Cancer, consumption, and heart and nervous diseases account for 40 of the increase. The diphtheria mortality has as usual increased steadily since the opening of the schools on September 10. Up to that date the weekly average of deaths from diphtheria had been 8. Following are the deaths by weeks since school opening: September 15, seven; September 22, 9; September 29, 14; October 6, 15; October 13, 21—a weekly average of 15 for the last four weeks, or an increase of nearly 90 per cent. over the previous weekly average. The death-rate per thousand per annum was 13.77; for the corresponding week in 1899, it was 13.59, and for the week ended October 6, 1900, 12.20. Of males 250, and of females 199 died. Under one year 93 died; between 1 and 5 years 54, and over 60 years, 80. The principal causes of death were: Acute intestinal diseases, 50; heart diseases, 49; consumption, 46; nervous diseases, 32; pneumonia, 27; cancer and diphtheria, each 21; Bright's disease, 18; typhoid fever, 11; scarlet fever, 4; suicide, 9 and violence, 19. During the week 575 births were reported. In the laboratory, 77 bacteriological examinations were made and 81 samples of milk were analyzed, 6.17 per cent. of which were found to be below grade.

LOUISIANA.

THE NEW ORLEANS Board of Health has neglected to attach the necessary 50-cent. war stamp to the marriage bonds issued since July, 1898.

DR. T. EDWARD SCHUMPERT, manager of the Shreveport Sanatorium, has associated with him in its management Drs. Thomas G. Ford and J. Ashton Blanchard.

THE ELECTION of officers of the Charity Hospital board at Shreveport, October 9, resulted in favor of Dr. Robert A.. Gray, president; Dr. Randell Hunt, chief surgeon, and Dr. Isaac M. Callaway, resident physician and superintendent.

THE STATE BOARD OF HEALTH has issued blanks to the various health officers and coroners throughout the state in accordance with the law passed by the last legislature regarding the collection of vital statistics in the country parishes. The reports are to be made quarterly, and from them the vital statistics of the state will be tabulated.

MARYLAND.

AT THE monthly meeting of the board of directors of Springfield Asylum for the Insane, October 10, it was decided not to admit feeble-minded and idiotic children to the institution.

DR. HOWARD BRATTON, health officer of Cecil county, reports that there were 26 cases of typhoid fever in that county in September, with 5 cases of diphtheria at Providence and 2 at Pleasant Hill.

Baltimore.

DR. CHARLES O'DONOVAN was elected vice-president of the Catholic Club.

DR. GEORGE W. DOBBIN was married to Miss Beatrice Dunderale, of Chicago, October 14.

DR. JOHN C. HEMMETER has returned after a tour embracing the principal cities of Europe.

THE COLLEGE OF PHYSICIANS AND SURGEONS formally opened for its twenty-ninth annual session on October 1.

IN COMPUTING the death-rate after January 1, 1901, the health department will accept the U. S. census population figure.

JOHNS HOPKINS UNIVERSITY MEDICAL DEPARTMENT opened October 1, with a total enrollment of 215. Dr. Percy M. Dawson has been made associate professor of physiology and Dr. William G. MacCallum associate professor of pathology.

THE JAIL BOARD has named a resolution requesting Dr. Thomas Opie, one of its members to consult with Dr. George L. Wilkins, jail physician, as the best way of keeping tuberculous prisoners isolated from other prisoners, and of otherwise lessening the possibility of a spread of the disease.

FOR THE WEEK ended October 13, the deaths were only 169 against 192 for the previous week, a death-rate of 16.24 per thousand per annum. There were 9 deaths from typhoid fever, 5 from diphtheria and "croup," 16 from tuberculosis, 8 from cancer, 7 from pneumonia, 10 from cholera infantum, and 12 from Bright's disease. New cases were reported of diphtheria, 49; typhoid fever, 47; scarlet fever, 10; measles, 14. Only 114 births were reported.

MICHIGAN.

AN INSTANCE of cheese poisoning occurred at Climax, in which cheese there was found, at the State Laboratory of Hygiene, a virulent form of the colon bacillus.

THE DELTA COUNTY HOSPITAL has completed a $4000 addition, and within two weeks, twelve additional rooms will be ready, which will give the hospital a capacity of 75 beds.

ABOUT two months ago H. Reynolds arrived in Coldwater from Detroit and began the practice of medicine. He was arrested October 10 on the charge of practicing without a license, and in the default of bail was locked up in the county jail.

A NUMBER of the diplomates of the Independent Medical College, Chicago, who thus far defied the law, appeared before the State Board of Examination and Registration, October 9 and 10 at Lansing. They are evidently beginning to appreciate that they must obey the law or leave the state.

TWO BUILDINGS, each 50x104 feet and two stories high, are almost completed for the Upper Peninsula Hospital for the Insane at Newberry. The State Board of Corrections and Charities will recommend an appropriation of $171,000 to erect two more cottages, an infirmary and an amusement hall for the hospital.

THE STATE BOARD OF HEALTH has received the following communication from a resident of one of the interior cities: "How does the State Board view the matter of death certificates? . . . We have two men here who have not been registered, and who have made application and been informed that they were not eligible, and yet they are doing business just the same as though they were. One of them has more funerals than all the other doctors put together."

MINNESOTA.

THE ESTABLISHMENT of a down-town corps of nurses for the poor, is under consideration in Minneapolis.

DR. NELLIE S. SHULEAN, Minneapolis, a graduate of Hamline University, has gone to Porto Rico as a medical missionary.

FORTY-THREE applicants for licenses to practice medicine in Minnesota appeared before the State Board of Medical Examiners at St. Paul, Oct. 2. Four of the applicants were women.

THE STATE INSTITUTIONS for dependents have 306 more inmates than in September 1899, 142 of whom are in the state hospitals for the insane. There are now 6107 inmates in state institutions.

ADDITIONS to the teaching force in the medical department of Hamline University are the following: Dr. Horatio B. Sweetser, Minneapolis, professor of surgery; Dr. Frederick J. Plondke, St. Paul, instructor in histology; Dr. Charles F. Disen, Minneapolis, assistant in anatomy, and Drs. Lyle C. Bacon, Knox Bacon and Mason Allen, St. Paul, assistants in clinical medicine.

MISSOURI.

DR. EDWARD EVANS PARRISH and Miss Estella Martha Mudd, both of Memphis, were married Oct. 2.

DR. JOHN ALBERT JAMES JAMES, St. Louis, was married to Miss Nelle Blanche Robeson, at Rochester, N. Y., Oct. 2.

DR. W. ELMER MONTGOMERY, Kansas City, was married to Miss Grace Hubbert, of Neosho, Mo., at St. Louis, Oct. 3.

DR. WILLIAM BARON, who has been studying in Germany for a year past, has returned to his home in St. Louis.

THE HEALTH DEPARTMENT of Kansas City has wisely decided to leave the problem of fighting smallpox and taking precautionary measures against it to the judgment of the city physician, Dr. Coffin.

DR. S. C. JAMES, the Kansas City member of the State Board, is making a praiseworthy effort to stop the illegal practice of medicine in his city. He is particularly after one whose diploma "by the Missouri Eclectic Medical College of Kansas City, Mo., was entirely complimentary and was not intended to indicate his attendance or graduation from this institution."

THE CRUSADE against unlicensed physicians in St. Louis has begun. The secretary of the State Board of Health has obtained warrants charging practice of medicine without a license, against three of the thirty-three unlicensed practitioners, and says that the day of arraignment for the others is just dawning.

NEW YORK.

DR. JAMES A. CRONIN, Buffalo, was married to Miss Mame Richards, at Seneca Falls, Oct. 3.

IN UTICA during September, 102 deaths were reported, a death-rate per thousand per annum of 21.5. The birth-rate for the same period was 19.1.

AN ARMENIAN who claimed to be a licensed practitioner was sent to jail for 55 days by Recorder Morschauser, Poughkeepsie, for defrauding a boarding-house keeper.

THE FIRST of a series of small colonies or farms for consumptives has just been established at Schroon Lake, in the foothills of the Adirondacks, by the Indigent Consumptives' Association, of which Dr. J. Austin Kelly is president. A plot of ground nearly 5000 acres in extent has been purchased, which will be laid out in small farms, each having its own house, truck patch or vineyard, where the patients can work and have some diversion from the contemplation of their own and their neighbors' ills.

New York City.

DR. THOMAS M. NEAFREY, house surgeon at the Harlem Hospital, was married a year ago to Miss Winters, of Sea Cliff, Long Island. As the rules of the hospital required all internes to be unmarried, he did not disclose his marriage until the expiration of his term on Oct. 1.

THE CITY BRANCH of the Loomis Sanitarium for Consumptives has recently been enlarged, and the required number of beds added to make this hospital eligible for admission to the Hospital Saturday and Sunday Association. It has now been admitted to this association, being the thirty-ninth on the list.

LAST WEEK the health officer of the port discovered the first case of yellow fever that has developed among saloon cabin passengers this year. The patient was on the Ward line steamer *Havana*, and as he presented suspicious symptoms on the arrival of that vessel, he was placed on Hoffman Island for observation. By the next day there was no longer any doubt that he was suffering from yellow fever.

AT A MEETING of the medical board of the Metropolitan Dispensary and Hospital, the following resolution was passed: "Inasmuch as by the death of Dr. John M. Brown [see THE JOURNAL, Sept. 29, p. 836], the Metropolitan Dispensary and Hospital has sustained a loss which is poignantly felt and with difficulty retrieved, and since, individually, we miss the rugged honesty, the incorruptible friendship which was constantly evidenced to us who knew him intimately, be it *Resolved*, that this feeble expression of our esteem for his character and our appreciation of our loss be spread on the minutes, and a copy of this resolution be sent to his family and to the medical press."

OHIO.

DR. PHILIP SEBASTIAN RIEG and Miss Frances Margaret Weick, both of Toledo, were married, October 10.

DR. W. MERRITT JOHNSTON, Findlay, has been elected county physician of Hancock county, to succeed Dr. Harry D. Belt.

DR. AND MRS. YEATMAN WARDLOW, Columbus, were robbed of nearly $3000 in cash and jewels at a hotel in New York, where they were spending their honeymoon.

MCGUFFY, Hardin county, is having an epidemic of smallpox. Dr. Charles O. Probst, secretary of the State Board of Health, has been notified that there have been 53 cases, but that the disease is now abating.

THE MEDICAL DEPARTMENT of Western Reserve University, Cleveland, began its fifty-sixth year on October 3. Dr. Henry S. Upson delivered the opening address. Dr. George W. Crete has been made professor of clinical surgery.

A PHYSICIANS' SOCIAL CLUB is to be formed in Cincinnati, with headquarters in the old Union City Club. The founders are Drs. N. Pendleton Dandridge, William H. Taylor, Jr., Joseph Hall, Jr., John E. Griewe, Paul Gillespie, Mark A. Brown and Charles E. Caldwell. The club will be known as the Cincinnati Medical Club.

THE HEALTH OFFICER of Cincinnati says that his department has sent to the hospital more than a dozen prostitutes suffering from contagious diseases, all of whom had medical certificates pronouncing them free from venereal disease. The inspection of these women by the health department is opposed by some physicians of the city.

THE STATE Board of Medical Examination and Registration expects many of the osteopaths to leave the state within the next few weeks. None of them presented themselves at the last examination and the board will take steps to have those remaining in the state indicted for violation of the provisions of the law. The next examination will be held in Columbus, for three days during the week commencing Dec. 1.

THAT LOCAL boards of health may step in and take charge of cases of illness where the patient is not receiving proper attention, is the substance of a decision rendered by Dr. C. O. Probst, of the State Board of Health. Dr. H. A. Snorf, of Ansonia, asked for instructions regarding a little girl lying very ill, whose parents were Dowieites and refused to call in a physician. After consultation with the attorney-general, Dr. Probst replied that there was no doubt that the local board of health could take entire charge of the case, send a physician to take care of the child, and if necessary remove her to a hospital for proper treatment.

PENNSYLVANIA.

DR. JOHN B. LOWMAN, Johnstown, returned on Oct. 5, from his trip to Europe.

THE WEST PENN MEDICAL COLLEGE, Pittsburg, opened for its annual session on Oct. 2.

DR. DAVID T. MCKINNEY, New Brighton, was married to Miss Catherine Minnis, at New Haven, Oct. 3.

THE LOCK HAVEN HOSPITAL has received a donation of a building site more than four acres in extent, on Susquehanna avenue, from Mr. Wilson Kistler, president of the hospital association.

THE STATE CONVENTION of County Commissioners, which met at Allentown October 9, considered whether or not the office of coroner should be abolished. Opinion seemed to be

divided. One resolution provided for the repeal of the law which requires registration of the births and deaths of persons in the state.

The State Directors of the Poor made an investigation of the insane asylum of Luzerne county, October 11, and found the management to be so good that they have decided to recommend the plan of this institution to others in the state. The new building cost $300,000. The inmates of the asylums at Danville and Wernersville have been taken to this hospital.

Philadelphia.

Drs. Judson Daland, W. M. L. Coplin and Charles P. Noble have returned from their trip to Europe.

Dr. F. Savary Pearce has been appointed clinical professor of nervous diseases in the Medico-Chirurgical College, to succeed Dr. Charles W. Burr, resigned.

Dr. Joseph McFarland, professor of pathology, delivered the address at the opening of the Medico-Chirurgical College, on "The Relation of the Mosquito to Malaria Fever."

Dr. Ella B. Everett delivered the address to the students at the opening of the Woman's Medical College, September 26. The following changes in faculty are announced: Dr. William V. Laws, professor of clinical and operative surgery, and Mae T. Harders, demonstrator of pharmacy.

Edward M. Paxson, formerly chief justice of the Supreme Court of Pennsylvania, has been elected president of the Medico-Chirurgical College, to succeed C. William Bergner, resigned. It has been decided to select only laymen as members of the board of trustees of this college, hereafter. At the present time a large number of physicians serve on the board.

The seventeenth annual report of the Kensington Hospital for Women has been issued and shows that there were treated in the hospital during the year 839 cases, as compared with 602 cases in the previous year. Several additions are to be made at an early date, including an isolated ward for septic cases. Dr. Charles P. Noble was elected surgeon-in-chief for the ensuing year. The new directors are Bishop O. W. Whitaker, William P. Ellison, Dr. Howard A. Kelly and John B. Stetson.

The deaths in the city for the week ended October 13 were 338, an increase of 4 over the previous week, and a decrease of 44 as compared with the previous week of 1899. The principal causes of death were: Apoplexy, 3; nephritis, 22; cancer, 16; tuberculosis, 55; heart disease, 22; bronchitis, 4; pneumonia, 14; inflammation of stomach and bowels, 14; marasmus, 17; poisoning, 2; suicide, 2; and tetanus, 1. Of contagious diseases 99 cases of diphtheria were reported, with 16 deaths; scarlet fever, 24 cases, 1 death; typhoid fever, 49 cases, 10 deaths.

The University of Pennsylvania will be the recipient of a gift on the part of Mrs. S. Weir Mitchell, who intends building as a memorial to her daughter an addition to the hospital, which will be used as a general ward or will be devoted to the treatment of contagious diseases. The idea of a pay hospital for contagious diseases originated in Philadelphia several years ago, and up to this time about $5000 or $6000 has been raised to establish that institution, The new building will be a welcome addition to the University.

At the last meeting of the Board of Charities and Corrections, held a few days ago, Dr. John V. Shoemaker introduced a resolution to enlarge the clinical teaching in the Philadelphia Hospital. In this way it is hoped to offer advantages similar to those found in Vienna, and other cities of Europe. The general clinics and pathologic instruction are to be free to all students registered at the different medical schools. General clinics are to be given in the amphitheater twice each week, and assignments for clinical lectures are to be made from the medical staff. Classes of students are not to exceed ten at one time. Surgical and gynecological cases are to be open to physicians and students under proper regulations. Clinical lectures on and presentation of cases of insanity will be made a special feature, and the teaching of the different specialties will be arranged by the respective members of the medical staff. Pathologists will be allowed to have classes, not exceeding twenty-five in number in the hospital museum. While such a liberal offer has been made for the utility of the different clinics to be held, the welfare of the sick is to be considered the first duty of the physician. Dr. Simon Flexner and Dr. Joseph McFarland were appointed pathologists to the hospital, and Dr. R. F. Sonnekamp assistant physician to the insane department. Dr. Robley D. Newton becomes surgical registrar.

TENNESSEE.

Dr. Heber Jones, President of the Memphis Board of Health, has gone to Europe for a three months' vacation.

The Vanderbilt University Medical Department, Nashville, opened for the college year, Oct. 1. Dr. Richard Douglas delivered the address of welcome and Dr. John A. Witherspoon conducted the first clinic at the City Hospital.

Dr. Henry P. Coile, city physician of Knoxville during 1898 and 1899, who sued the city for $5,000 which he claimed was due him for attending smallpox cases while in the employ of the city, has been non-suited and will appeal to the Supreme Court.

Initial steps were taken at the recent meeting of the Tri-State Medical Society of Tennessee, Alabama and Georgia, at Chattanooga, to secure medical legislation in the three states mentioned regulating or prohibiting the marriage of habitual criminals, persons afflicted with incurable diseases, drunkards and victims of harmful drugs.

The Medical College of the University of Nashville opened for its annual session, Oct. 1. Dr. William G. Ewing made the annual address, which dealt with the history of the institution. The changes in the faculty are: Dr. Carl C. Warden, professor of anatomy; Dr. William G. Frierson, adjunct professor of surgery, and Dr. J. Dillard Jacobs, professor of physiology and hygiene.

Two undertakers, named Thompson, were recently convicted in Memphis of having engaged in cadaver traffic. They were said to have shipped bodies out of the state in zinc-lined and air-tight trunks. The undertakers were sentenced to pay a fine of $750 each, and to serve 11 months and 29 days in the workhouse. The case was appealed to the Supreme Court, where the finding of the lower court was approved. Governor McMillan was then petitioned for a pardon, and wrote to the clerk of the Shelby County Criminal Court instructing him not to execute the sentence until the governor could look into the case. Some three months later, as the governor had taken no action in the matter, the sheriff was instructed by the judge of the criminal court to carry the sentence into execution.

TEXAS.

The Health Department of Galveston has established two depots for free distribution of disinfectants.

The John Sealy Hospital, Galveston, is being repaired at the expense of the son and daughter of the philanthropist who donated the building to the state.

The Galveston Board of Health has issued regulations requiring innkeepers to report any case of sickness to the health physician within six hours; and also requiring physicians to report to the same official within six hours full particulars of any patient "sick of any malignant fever or infectious or pestilential disease."

Brackenridge Hall, the dormitory for the female students of the medical department of the University of Texas, Galveston, which was badly wrecked, is being completely restored and refurnished by Col. George W. Brackenridge, of San Antonio. He has also advanced to the university the money needed for the repairs to the medical school.

VIRGINIA.

The will of the late Dr. Benjamin Harrison, Richmond, was admitted to probate Sept. 21. The value of the estate is $2000.

DR. CHARLES V. CARRINGTON, Richmond, has been appointed surgeon to the State Penitentiary, to succeed Dr. Benjamin Harrison, deceased.

THE UNIVERSITY COLLEGE OF MEDICINE, Richmond, held its formal opening Oct. 5. Dr. Landon B. Edwards presided. The address was delivered by Dr. Henry Pervis Smith, Davidson College, N. C., on "The Intellectual Value of Scientific Training."

THE MEDICAL COLLEGE OF VIRGINIA, Richmond, began its sixty-third annual session October 20. Dr. Christopher Tompkins, dean of the college, delivered the inaugural address. Dr. Ennion G. Williams has been made professor of histology, pathology and bacteriology, vice Dr. Ernest C. Levy, resigned.

WASHINGTON.

DR. SAMUEL J. HOLMES, bacteriologist of the board of health of Seattle, has resigned, after a service of two years.

DR. WILLIAM G. BOOTH, Seattle, was married to Miss Fannie Hamilton Norfolk, of North Walbrook, Md., September 11.

ST. LUKE'S HOSPITAL, Spokane, was reincorporated September 7. A site for the new building has been donated by John A. Finch.

THE CORNER-STONE of the Sisters of Peace Hospital, New Whatcom, was laid with appropriate ceremonies by Bishop John O'Dea, on September 23.

WEST VIRGINIA.

THE INCORPORATION of the Harrison County Hospital Company at Clarksburg is announced.

MORGANTOWN has a new hospital, which was opened for service, October 3. It has been thoroughly equipped by its owner, Dr. Spencer S. Wade, and is intended for the use of the local profession.

DR. CASSIUS C. HOGG, Huntington, has been promoted and is now major and surgeon, assigned to the Second Infantry, W. Va. N. G.; and Dr. G. Clarence Schoolfield, Charleston, has been commissioned first lieutenant and assistant-surgeon and assigned to the same command.

WISCONSIN.

RACINE has about 50 cases of typhoid fever. Some of the physicians have been lax in reporting cases.

DR. ROBERT A. KITTO, Racine, who lost an eye by a street-car accident, a year ago, has so far recovered $18,000 from insurance companies.

THE MILWAUKEE MEDICAL COLLEGE opened for its seventh annual session, October 2. Dr. John Madden delivered the address of welcome.

AT A MEETING of the State Board of Medical Examiners held at Oshkosh, October 9 and 10, 75 licenses were granted to applicants with diplomas from reputable colleges. Four applicants with diplomas from the Metropolitan College of Illinois were denied licenses.

CANADA.

DR. A. HOLMES SIMPSON, Winnipeg, has been appointed by the Provincial Government of Manitoba, chairman of the Provincial Board of Health.

DR. WEBSTER, of the Rockwood Asylum, Kingston, has been transferred to the Hamilton Asylum for the Insane, and Dr. Herriman of the Hamilton Asylum goes to the Rockwood Asylum. Both changes are promotions and will come into effect November 1.

NEWS from Dawson under date October 4, states that quarantine has been established at the Forks of Bonanzo and Eldorado, against smallpox. Smallpox is epidemic at Eldorado, twelve miles from Dawson. There are also twelve cases on the isolation island, two miles below Dawson. A smallpox hospital is under construction at Dawson, and there is felt some uneasiness lest that city be quarantined against the outside world.

The Medico-Chirurgical Society of Montreal has elected the following officers for the ensuing year: Dr. J. Perrigo, president; Dr. Stirling, first vice-president; Dr. Macarthy, second vice-president; Dr. Bazin, secretary; Dr. Jack, treasurer; and librarian, Dr. Lockhart. The retiring president, Dr. J. George Adami, in his report, stated that the society was ready to go on with the work of compiling the addendum to the British Pharmacopeia, and that it would co-operate with Westmount in the erection of a contagious disease hospital.

QUEEN'S UNIVERSITY, KINGSTON.

A public meeting was held in the city of Kingston, October 9, for the purpose of discussing the granting by the city of $50,000 to Queen's University. Principal Grant said that the passing of the bonus would in the first place anchor Queen's to Kingston and put an end to rumors about the University going elsewhere; then it would increase the capacity of the students from 500 to 1000. It would also give Kingston a right to go to the provincial government, showing that there are only two educational centers in Ontario, and that Kingston has as much right for consideration as the other one in Toronto. This attitude of Queen's is interesting to medical educationists throughout the province, as if aid be granted by the government as sought, it would be placing the Medical Department of Queen's on a par with the Medical Department of Toronto University.

FOREIGN.

THE FRENCH medical papers are urging the imposition of an extra tax on alcohol and absinthe for the purpose of raising funds for tuberculosis sanatoria.

DR. SILVA, a delegate from Mexico to the International Medical Congress, stated in his address that no case of criminal abortion had ever come before a Mexican court.

DR. A. KUHN, professor of otology at Strassburg, died Sept. 16, 63 years of age. His principal contributions to scientific literature were on the anatomy of the ear.

THE PRESENT mayor of Lyons, France, is Dr. Augageur, who is at the same time professor in the medical faculty and surgeon-in-chief at one of the hospitals. His predecessor in the office of mayor was also a physician, and occupied the position for thirty years.

A LIFE-INSURANCE company in Gotha states that the number of policy-holders who have died of cancer during the last ten years is 1 per thousand more than during the preceding decade. The greatest increase is in policy-holders between the ages of 66 and 70.

THE UNIVERSITY of Odessa has organized a medical department and placed it in charge of Podwyssotzki, the eminent pathologist of Kieff. Both the Russian and German medical schools report a diminished attendance this year. In Germany the number of medical students has fallen from 8848 in 1890, to 7518 this year, while the attendance in the law schools has increased by 3000 during this period.

THE MEDICAL inspectors of schools in Frankfurt, Germany, receive $250 a year, and have oversight over 1700 scholars. Two hours every two weeks must be devoted to each school. The children are given a "health book" when they first enter, and it accompanies them through all their school life. Several of the large cities of Germany now have medical inspection of schools, but the system has not yet been introduced into Berlin.

THE EDITORS of the *Bibliographia Medica* announce that they will soon commence the publication of special editions of the *Bibliographia* each limited to one of the following specialties: 1, anatomy, physiology and veterinary subjects; 2, hygiene, legal medicine and assistance; 3, therapeutics and materia medica; 4, internal and general medicine; 5, general and special surgery, and 6, gynecology, obstetrics and pediatrics.

THE BERLIN sickness-insurance institution (Anstalt) has doubled the capacity of its sanatoria during this last year.

By judicious selection of the inmates 85 per cent. of the 592 patients dismissed in 1899 from the sanatorium at Goetersgolz have been able to resume their occupation. The institution is to extend the principle of sanatorium treatment to syphilitic policy-holders after this year, and has already acquired land for the purpose in one of the suburbs of Berlin.

THE SLAVONIC members of the profession have taken measures for closer organization and more extended intercourse between them and the outside world. A committee has been formed to decide on a uniform scientific terminology from comparative study of Russian, Polish, Bohemian, Servian, Bulgarian, etc. Dr. Pesina, of Prague, is the secretary. Subcommittees are to be formed in each of the countries interested. It has also been decided to publish a general review of contemporaneous Slavonic medical literature, entirely in French. Dr. Gundrum is in charge of this matter.

LONDON LETTER.

THE PLAGUE IN GLASGOW.

Thanks to the very careful and elaborate precautions of the authorities, of which I have informed you, the outbreak of plague appears to have come to an end. For nearly a fortnight no new cases have occurred. At present there are in hospital 21 cases of plague and 2 suspected cases. Two deaths have taken place in the past week. The number of persons who have been in contact with cases of plague and are detained under observation in reception houses is now reduced to 19. No doubt now remains that the Glasgow outbreak is of the same nature as that which ravaged London two and a half centuries ago; the symptoms are the same. But the means of recognition, especially the bacteriological, and the methods of sanitary defense are quite new; hence the different result. Glasgow has reaped the reward of having in the first place keen medical men who quickly recognized, first, that they had an infectious disease of doubtful nature under observation, and soon afterward that it was the dreaded plague, and in the second place of an elaborate sanitary system worked by an alert police. The most satisfactory theory of the origin of the outbreak is that the source was an unrecognized ambulant case which occurred in some sailor or traveler. As in other diseases, while plague is extremely easy of recognition in well-marked typical cases it is not so in its slighter and atypical forms. This fact is borne out in the present outbreak, for many of the cases would never have been recognized but for the association of the patients with well-marked cases. Yersin's serum was used in the treatment and seems to have given very satisfactory results. It was injected into the veins in doses of 20 c.c. Persons who were known to have been in contact with cases were given subcutaneous injections of 10 c.c. as prophylaxis.

THE SOUTH AFRICAN HOSPITAL COMMISSION.

The commission has left Johannesburg and visited the hospitals throughout Natal, taking evidence as it traveled. Further evidence was given that the medical staff was undermanned and hampered with "red tape." At Pietermaritzburg it was stated that the hospital was unsuitable. It was infected with bugs, which were found even under the patient's splints. Some men suffered terribly, and one enteric patient ran away in delirium, saying he could not stand the bugs. At Kimberley the evidence given by the doctors and the members of the hospital staffs conflicted with that given by the soldiers. The former agreed that the hospitals in the town were well arranged and well equipped, and that no complaints had been made. The latter, on the contrary, complained of bad treatment at Paardeburg owing to lack of administrative ability. The field hospitals, they said, were so badly placed that many men had to lie in pools of water. The camp at Maitland was placed in a similar position, the men lying in tents full of water, many of them without blankets, overcoats or oilskins.

The letters published by Mr. Burdett-Coutts in the *Times*, which it will be remembered were the cause of the commission, have made him immensely unpopular with a section of his own Tory party. His leader, Mr. Balfour, treated him with gross discourtesy in the House, and ridiculed even his cogent arguments. He has been opposed at the general election, which is now proceeding, by another Tory candidate. However his constituency, Westminster, have marked their approval of his actions by returning Mr. Burdett-Coutts by a majority of 2715 votes against 439.

THE CONSUMPTION OF TOBACCO IN THE UNITED KINGDOM.

According to the government report the consumption of tobacco was higher in 1899-1900 than it has ever been known before, with the exception of a single year. It was 90,000,000 pounds, which is 2 pounds per head of the population. On the point of purity the report is very satisfactory. In 95 samples taken from manufacturers and dealers 20 were found to be mixed with licorice or glycerin. Twenty-two specimens of snuff were analyzed and except one, which contained an illegal proportion of alkaline salts, all were conformable to law.

MALARIA AND MOSQUITOES.

The part played by mosquitoes in the transmission of malaria is now being very actively investigated. The recent exceedingly dramatic attempt to prove Dr. Manson's theory has been so far successful. Drs. Sambon and Lowe, of the London School of Tropical Medicine, have now lived in a mosquito-proof tent, in the fever-stricken Roman Campagna from the early part of July up till September 21, without contracting malaria. What may be called a complimentary proof of the mosquito theory is equally satisfactory. Mr. P. T. Manson, son of Dr. Manson, has allowed himself to be made the subject of experiment—to be bitten by mosquitoes sent from Rome to London, which had been fed on a patient with a double benign quartan infection. Mr. Manson was bitten on August 29 and 31 and on September 2, 4, 10 and 12. On September 13 he had a feeling of languor and felt chilly, which symptoms were followed by headache, pains in the bones and a temperature of 101.4. The usual symptoms of tertian fever developed and the spleen became enlarged. Tertian parasites were found in his blood. Under quinin he recovered.

At the end of 1898 a committee was appointed jointly by Mr. Chamberlain and the Royal Society to investigate malaria, and it was determined, in view of the connection with mosquitoes, that collections should be made of the different species in the various tropical colonies. These have been forwarded to the Natural History Museum at South Kensington. Over 3000 specimens have been received and more are constantly coming in. The work of identifying and classifying them is performed by a professional dipterist, Mr. Theobald, who is preparing a monograph on mosquitoes, based on the collections at the museum. The genus Anopheles, which is the medium by which malaria is transmitted from person to person, is represented in the museum by 22 species. Although the genus is world-wide, the distribution as regards species is not wide. One of the greatest distances between any two localities for the same species is Formosa and the Straits Settlement.

Correspondence.

Yellow Fever Etiology.

WASHINGTON, D. C., Oct. 8, 1900.

To the Editor:—In Surgeon Wasdin's paper, published in THE JOURNAL, Oct. 6, 1900, p. 807, he says:

During my experimental work we were honored by a visit, at our laboratory in Havana, from Dr. Sternberg, who said to me, while passing through our animal room, that the strongest argument against the acceptance of the specificity of any one of the organisms advanced as the cause of yellow fever, was the fact that no one of them, during experiments in laboratory, had ever communicated this disease by natural infection to the animals of those laboratories; and he asserted that, whenever such infections should occur, the lesions being characteristic, and the organism recovered, he would accept that organism thus demonstrated as the cause of yellow fever, and such demonstration as the proof of its specificity.

I think that Dr. Wasdin must have misunderstood me. My recollection is that I said to him, what I have frequently said to others, that to my mind one of the strongest arguments

against the specific rôle of Sanarelli's bacillus was the fact that no one—man— had contracted yellow fever from exposure in laboratories where experiments upon animals were being conducted. Man is known to be especially susceptible to yellow fever, whereas there is, so far as I know, no satisfactory evidence that any of the lower animals suffer from the disease during the prevalence of an epidemic. During my first visit to Havana, in 1879, I exposed various animals, including dogs, guinea-pigs and rabbits, on a filthy ship in the harbor, which I assumed to be infected, as nearly all the members of the crew were sick on board with yellow fever. After this exposure I carefully observed my animals for several days, taking their temperature twice daily, but the result of the experiment was entirely negative.

In a report by Reed and Carroll, of their investigations made at the Army Medical Museum in this city, not yet published, but soon to appear in the *Journal for Experimental Medicine*, they arrive at the following conclusions: "1. Bacillus X (Sternberg) belongs to the colon group. 2. Bacillus icteroides (Sanarelli) is a member of the hog-cholera group. 3. The various channels of infection, the duration of the disease and the gross and microscopical lesions in mice, guinea-pigs and rabbits are the same for the bacillus icteroides and the hog-cholera bacillus. 3. The clinical symptoms and the lesions seen in dogs inoculated intravenously with bacillus icteroides are reproduced in these animals by infection with the hog-cholera bacillus. 5. Bacillus icteroides when fed to the domestic pig causes fatal infection accompanied by diphtheritic, necrotic and ulcerative lesions in the digestive tract, such as are seen in hogs when infected with the hog-cholera bacillus. 6. This disease may be acquired by exposing swine in pens already infected with bacillus icteroides, or by feeding them with the viscera of infected pigs. 7. Guinea-pigs may be immunized with sterilized cultures of bacillus icteroides against a fatal dose of the hog-cholera bacillus, and vice versa. 8. Rabbits may be rendered immune by gradually increasing doses of a living culture of bacillus icteroides of weak virulence against a fatal dose of a virulent culture of the hog-cholera bacillus. 9. The sera of animals immunized with bacillus icteroides and the hog-cholera bacillus show a marked reciprocal agglutinative reaction. 10. While the blood of yellow fever practically does not exercise an agglutinative reaction upon bacillus icteroides, the blood of hog-cholera agglutinates this bacillus in a more marked degree, thus pointing, we think, to the closer etiological relationship of this bacillus to hog-cholera than to yellow fever."

It is well known that mice, rabbits and guinea-pigs are very susceptible to infection by the hog-cholera bacillus and that they may be readily infected through the respiratory tract. It is difficult to understand how Drs. Reed and Carroll, and their laboratory assistants, who have been conducting experiments with Sanarelli's bacillus during the past two years, and during the summer months as well as in winter, could have escaped infection if this is truly the specific germ of yellow fever. The same remark applied to Dr. Wasdin and many other non-immunes who have conducted similar experiments in various parts of the world. These experiments at the laboratory of the Army Medical Museum included a large number of inoculation experiments upon lower animals and the making of autopsies when they died. That Dr. Carroll was susceptible to the disease is shown by the fact that he has suffered a severe attack this summer in Havana.

Of course, precautions as regards disinfection are taken, but it would appear that a lot of animals infected with the yellow-fever germ kept in the animal room of a laboratory during the summer months would be very likely to give rise to a local epidemic of the disease, or at least to infect a non-immune attendant whose duty it was to clean their cages.

From Wasdin's point of view the question of yellow-fever etiology is settled. I regret to say that I can not concur in this opinion. The researches which have been made by the board of which Reed and Carroll are members, in Havana during the present year, are not favorable to this view. I think, therefore, it will be wise for conservative physicians not to consider this matter as definitely settled until the evidence is all in. I may remark that the Liverpool School of Tropical Medicine has sent a commission of experts to study the disease in Brazil. I would also call attention to the fact that the researches of Dr. Adolph Lutz, a very competent bacteriologist, made at San Paulo, Brazil, are not favorable to the Sanarelli bacillus. His results are published in the "*Rivista d'Igiena e Sainta Publica* (July, 1900). Very truly yours,

GEORGE M. STERNBERG.

Deaths and Obituaries.

JOSEPH PAYSON WRIGHT, M.D., assistant surgeon-general U. S. A., died suddenly at his home in Washington, October 8, aged 74. He was the son of Brevet Brigadier-General J. J. B. Wright, surgeon, U. S. A., a distinguished officer of the medical department whom many will recall personally. He graduated in arts at Dickenson College, Carlisle, Pa., 1858, and in medicine, 1860. His record of service is one extending back to the early years of the civil war. He entered the service as assistant-surgeon in May, 1861; was promoted to a captaincy in May, 1866; to a majorship in July of the same year; as lieutenant-colonel in April, 1889, and attained his final rank, that of colonel and assistant surgeon-general, on May 16, 1894. During the civil war his service was principally in the departments of Ohio and Cumberland, with General Grant's army in the field at Florence, Miss., and on various executive duties as medical purveyor and assistant medical-director. His long service necessarily took him to various posts and stations, chiefly in the West. He was ordered to the military prison at Fort Leavonworth, Kan., in July, 1884, at which place he served many years. During his more recent service Colonel Wright served as medical purveyor in charge of the large depot in St. Louis, from December, 1893, until he was detailed as chief surgeon, headquarters, department of Dakota, St. Paul, Minn., November 24, 1899. At the time of his death he was on leave of absence pending his retirement on Dec. 25, 1900 .

WILLIAM V. MORGAN, M.D., a prominent surgeon of Indianapolis, at one time in charge of the department of surgery of the *Medical and Surgical Monitor*, died October 3 of peritonitis, aged 47. He was graduated from the medical department of Washington University in 1875. He had been a member of the faculty of the Central College of Physicians and Surgeons, was ex-president of Marion County Medical Society, and of the Mitchell District Medical Society, and member of the AMERICAN MEDICAL ASSOCIATION.

GEORGE W. SEAY, JR., M.D., Nashville, Tenn., a graduate of Vanderbilt University medical department in 1887, died September 26, from a gunshot wound in the head, aged 35. He was a member of the faculty of the University of Tennessee, major-surgeon of the 5th Tennessee Infantry, and served during the Spanish-American War as assistant-surgeon, 2d Tennessee Infantry, U. S. V.

JOSEPH MCKEE, M.D., who had resided in South Denver, Colo., for about twenty years, died September 27. He was graduated from the medical department of Western Reserve University, Cleveland, Ohio, in 1852.

N. ROUNDS BARNES, M.D., Binghamton, N. Y., a graduate of Albany Medical College in 1858, and in the Civil War surgeon of the 76th and then of the 184th Infantry, N. Y. V., died at his home September 30, aged 65.

CHARLES ROEMELT, M.D., acting assistant-surgeon, U. S. A., died July 20, while serving in the Philippines. Dr. Roemelt was born in Elmira, N. Y., in 1876, and was graduated from the University of Buffalo.

STEPHEN E. DE WITT HOORNBECK, M.D., College of Physicians and Surgeons, New York, 1865, died at Ellenville, N. Y., October 3. He had for some years abandoned medicine for general business.

WILLIAM A. GROVER, M.D., Berkshire Medical College, Pittsfield, Mass., 1843, died at Berkeley, Cal., October 4, aged 82

years. He was the first secretary of the California State Medical Society.

JOHN CORTEE FAIRFAX, M.D., University of Pennsylvania, 1853, died, after a brief illness, at his home, "Northampton," Prince George County, Maryland, October 28, aged 70 years.

JOHN A. LEADER, M.D., University of Vermont, 1888, a practitioner of Lewiston, Me., aged 35, died at Boston, October 9, after undergoing an operation for ear trouble.

THOMAS J. WOOLF, M.D., New Iberia, La., a graduate of Tulane University medical department, New Orleans, in 1878, died at Denver, Colo., September 30, aged 48.

CRAWFORD IRWIN, M.D., Jefferson Medical College, 1847, died at Hollidaysburg, Pa., October 8, aged 76 years. He was an ex-president of the State Medical Society.

JACOB P. RUSSEL, M.D., Medico-Chirurgical College, Philadelphia, 1888, died October 8. at his home in Philadelphia, after a lingering illness, aged 64 years.

JOHN P. HODGES, M.D., Danville, Ala., who was graduated from the University of Nashville medical department in 1873, died September 25, after a long illness.

STEPHEN D. THACH, M.D., Vanderbilt University medical department, Nashville, Tenn., 1891, was assassinated at his home, Decherd, Tenn., October 1.

LAWRENCE M. GOULD, M.D., Harvard University, 1877, died suddenly at Portland, Me., while on a vacation. He was practicing at Hyde Park, Mass.

SAMUEL PANGBURN, M.D., Ohio Medical College of Cincinnati, 1866, died at his home in Maysville, Ky., October 4, of apoplexy, aged 62 years.

CHARLES Y. SWAN, M.D., College of Physicians and Surgeons, New York, 1856, died at Morristown, N. J., October 8, aged 65 years.

THOMAS A. ATCHISON, M.D., one of the old and esteemed physicians and citizens of Nashville, Tenn., died October 2, aged 83.

WELLINGTON MASON, M.D., University of Pennsylvania, 1898, died at Philadelphia, September 30, of appendicitis, aged 35 years.

CHARLES C. CRAWL, M.D., Omaha Medical College, 1896, died at Randolph, Neb., October 7, of injuries received in a runaway.

WILLIAM WEBB BROWNING, M.D., Bellevue Hospital Medical College, 1884, died October 3 at Brooklyn, N. Y., aged 48 years.

RALPH J. WENNER, M.D., University of Wooster, 1892, died at his home in Cleveland, Ohio, October 9, of typhoid fever.

A. J. WELFLEY, M.D., Jefferson Medical College, 1896, died at Berlin, Pa., October 3, of pulmonary tuberculosis.

JUNIUS N. BRAGG, M.D., Tulane University, 1861, died at his home, Camden, Ark., October 2, aged 60 years.

EDWARD RICHARDSON, M.D., Transylvania University, 1858, died October 9, at Louisville, Ky., aged 70 years.

ALFRED T. BROSSEAU, M.D., University of Victoria College, 1867, died October 9, at Montreal, Que.

R. T. MEAD, M.D., Albany Medical College, 1863, died at his home in Manistee, Mich., October 10.

FRANK W. CRANE, M.D., Buffalo University, 1868, died at Corfu, N. Y., aged 65.

Therapeutics.

TUBERCULOSIS.

TURPENTIN IN TUBERCULOSIS.

℞.	Terebinthinæ	℥iv	16
	Cretæ preparatæ	℥ii	8
	Sacch. albi	℥ii	8
	Pulv. acaciæ	℥ii	8
	Aquæ cinnamomi, q. s. ad	℥iv	128

M. Ft. emulsio. Sig. Shake. One dessertspoonful three times a day on an empty stomach. —*Med. Record.*

TUBERCULOUS COUGH.

℞.	Syrupi pruni virginianæ		
	Tinct. lobeliæ		
	Tinct. sanguinariæ		
	Syrupi ipecacuanhæ, āā	℥ii	8
	Tinct. capsici	℥i	4

M. Sig. One teaspoonful every two hours.

Med. Summary.

SURGICAL TUBERCULOSIS OF JOINTS.

℞.	Formalin	m. lxxv	5
	Glycerini, q. s. ad	℥iii	96

M. Sig. As an injection in tuberculous joints.

Hahn recommends the above as surpassing iodoform in such cases. He advises that the pus be evacuated by syringing, the cavity washed and one-third as much of the solution be injected as pus evacuated. It may be repeated in two weeks if necessary. —*Denver Med. Times.*

TREATMENT OF TUBERCULOSIS.

Knopf's outline of treatment in the "Twentieth Century Practice of Medicine" is as follows:

HYGIENIC TREATMENT.

a. Sanatorium treatment.

b. Home treatment, such as choosing for the patient the largest, pleasantest, sunniest, best-ventilated rooms. There should be no carpets, heavy curtains or superfluous furniture.

c. Aerotherapy and pneumotherapy.

d. Solar therapy. Exposure of the whole body in its nude state to the air and the rays of the sun is very favorable to metabolism and oxygenation and renders the cutaneous system less susceptible to the changes.

e. Attention to dress and personal hygiene.

f. Hydrotherapy.

g. Dietetic treatment.

h. Medicinal and symptomatic treatment.

SYSTEMIC TREATMENT.

Marfan prescribes cod-liver oil, phosphorus and creosote as follows:

℞.	Olei morrhuæ	℥xss	336
	Creosoti	℥ss	16
	Phosphori, 1/1000	℥i	32

M. Sig. One dessertspoonful after each meal.

This combination is very efficacious if well borne.

—*American Text-Book of Therapeutics.*

Hare says: 1. Never use cod-liver oil when the disease is past the primary stage unless fibrous changes are going on and the changes are slow. 2. The use of it during the rapid degenerative changes is harmful, as it is of no service, disorders digestion and destroys the appetite.

℞.	Creosoti carbonatis		
	Ammonii sulphoichthyolatis, āā	℥iv	16
	Glycerini	℥i	32
	Aquæ menthæ piperitæ	℥iiss	10

M. Sig. Ten to thirty drops three times a day.

—Goldmann.

Landouzy states that benefit is derived from saline injections subcutaneously by reason of reflex action on the nervous system. The formula he uses is as follows, given in small doses:

℞.	Sodii phosphatis	gr. lxxv	5
	Potassii phosphatis	gr. lxxv	5
	Sodii chloridi	gr. lx	4
	Sodii sulphatis	℥v	20
	Aquæ destil	℥vi	192

M. Sig. To be used hypodermically in quantity desired.

℞.	Olei morrhuæ	℥vi	192
	Glycerini puri	℥i	32
	Tinct. quillajæ (soap-bark)	℥iss	6
	Aquæ lauracerosi	℥i	4

M. Ft. emulsio. Sig. Shake; one tablespoonful two or three times daily. —*Med. News.*

℞ Olei morrhuæ .....℥xii 384
Syrupi tolutani .....℥vi 192
Tinct. tolutani .....gtt. xii 75
Olei caryophylli .....gtt. ii 12

M. Sig. Shake well and take a tablespoonful two or three times a day.

—Bricemoret: *Twentieth Century Practice of Medicine.*

℞ Olei olivæ .....℥x 300
Creosoti .....℥i 32
Vini opii .....m. xlv 3

M. Sig. Two tablespoonfuls as an enema, mixed with the yolk of an egg and added to a tumblerful of water.

—*Pacific Medical Journal.*

Iodoform is recommended by such men as Flick, Ransom and De Renzi.

℞ Europhen .....℥i 4
Olei anisi .....℥i 4
Olei rosæ .....m. i 06
Olei olivæ .....℥iiss 80

M. Sig. One to two teaspoonfuls rubbed into armpits or inner parts of the thighs once or twice daily.

Flick thinks europhen combined in this way with olive oil evolves nascent iodin. —*Progressive Medicine.*

℞ Iodoformi .....gr. iss 09
Codeinæ .....gr. 1/3 02
Ext. cascaræ sagradæ.....gr. 1/2 03

M. Ft. pil. No. i. Sig. One pill three times a day.

—Knopf.

℞ Sodii cinnamatis (aqueous 5 per cent. sol.) .....℥i 32

Sig. Inject four or five drops into the gluteal region, avoiding the region of the gluteal vessels and the sciatic nerve. Repeat the injection every other day.

Oppression, chilly sensation and headache are indications for reducing the size of the dose.

℞ Pulv. acidi cinnamici .....gr. vii 5
Olei amygdalæ dulcis .....℥iiss 10
Yolk of egg .....No. i
Sodii chloridi, 7/1000, q. s. ad.....℥iiiss 112

M. Ft. emulsio. Sig. To be used as an intravenous injection into the fold of the elbow. Four to six drops to be used daily. —Landauer: *Riforma Med.*

He recommends a dose of 1/60 grain of cinnamic acid gradually increased to 1/30 every second or third day. He claims that cinnamic acid produces intense phagocytosis, and causes a sclerotic condition in the tissues in the neighborhood of the morbid growth.

℞ Guaiacol carbonatis .....gr. xv. 1
Strychninæ sulphatis .....gr. i 06
Resinæ capsici .....gr. iii 20
Ammonii chloridi
Quininæ bisulphatis, āā .....gr. xxx 2

M. Ft. capsulæ no. xxx. Sig. One every four hours.

—Stewart: *Internat. Med. Mag.*

Dr. Laborde, of Paris, calls attention to the importance of conserving the digestive capacity of the patients and recommends the following to be given hypodermically:

℞ Guaiacol .....℥v 20
Eucalyptol .....℥iiss 10
Sparteinæ sulphatis .....gr. xv 1
Olei amygdalæ dulcis, q. s. ad.....℥vi 192

M. Sig. Begin with eight drops and inject while the patient is in bed; gradually increase the amount of the injection to six or seven cubic centimeters—ninety to one hundred minims.

—*Therapeutic Gazette.*

Gimbert used the following hypodermatically:

℞ Creosoti .....m. xv 1
Olei amygdalæ dulcis .....℥iiiss 14

M. Sig. Inject drop by drop intermitting occasionally to avoid pain until the full amount is injected.

The virtue of creosote depends upon its purity and especially on its freedom from carbolic acid and pyrogallol. Pure creosote has an oleaginous appearance, a strong resinous odor, a caustic taste, is slightly soluble in water, very soluble in alcohol and oils. The true virtue of creosote is chiefly nutritional. —Whittaker.

℞ Ichthyolici
Aquæ destil. āā .....℥v 20

M. Sig. Begin with four drops three times daily before meals and increase to forty drops. Children between 5 and 12 years take one half the dose. A draught of black coffee after taking it will disguise the bad taste. Cohn reports nothing but good effects from its use.

—*American Text-Book of Therapeutics.*

℞ Creosoti .....℥ss to 3i 2-4
Olei amygdalæ dulcis .....℥vi 24
Yolk of egg, No. 1
Aquæ destil.....℥viss 208

M. First dissolving the creosote in the oil and subsequently emulsify with the yolk of egg. Sig. Inject per rectum at night.

The oil of sweet almonds is preferred, because it does not produce colic and because it contains matters that act as adjuvants in alimentation.

—Vopelius: *Text-Book of Applied Therapeutics.*

CREOSOTE IN THE FORM OF A WINE.

℞ Creosoti .....℥ss 16
Tinct. gentianæ comp. .....℥i 32
Alcoholis .....℥iii 96
Vin. xerici, q. s. ad.....Oii 1024

M. Sig. One dessertspoonful three times a day, provided the temperature is not too high. —*Les Nouveaux Remédes.*

℞ Creosoti .....m. xxv 1 5
Tinct. gentianæ .....℥ss 16
Spts. vini rect .....℥vi 24
Vin. xerici q. s. ad .....℥vi 192

M. Sig. One tablespoonful three times a day.

℞ Argenti nitratis (2.5 per cent. sol.)....℥i 32

Sig. Inject four to seven drops in the neck over the course of the vagi, on the same side as the diseased lung. Repeat the injection once a week only.

—Thos. J. Mays: *Med. and Surg. Reporter*

℞ Iodoformi .....gr. xxiv 1 5
Creosoti .....m. iv 25
Ol. eucalypti .....m. viii 5
Chloroformi .....m. xlv 3
Alcoholis
Etheris, āā q. s. ad .....℥ss 16

M. Sig. Five to twenty drops to be used in an inhaler every three hours. —Wm. Perry Watson.

INHALATION OF FORMALIN.

℞ Formalin .....℥i 4
Glycerini .....℥iv 16
Aquæ .....℥v 160

M. Sig. Use in the inhaler four or five times in twenty four hours. —Green: *N. Y. Lancet.*

It must be kept in mind that formalin is only 40 per cent. strength of formaldehyde.

When there is great exhaustion and the sputum clings about the throat and mouth, Foxwell recommends the following:

℞ Spts. etheris
Spts. ammoniæ arom.....m. xxx 2
Tinct. aurantii .....m. x 66
Aquæ camphoræ, q. s. ad .....℥i 32

M. Sig. One tablespoonful to be taken every six, four or two hours. —*Phil. Med. Jour.*

PURIFICATION OF AIR.

To purify the air in a room occupied by a phthisical patient, use the following:

℞ Guaiacoli .....℥iiss 10
Acidi carbolici .....℥iss 6
Eucalyptol .....℥ii 8
Menthol .....℥i 4
Thymol
Olei caryophylli, āā.....℥ss 2
Alcoholis—pure .....℥vi 192

M. Sig. Spray frequently in the room.

—*Louisville Med. Monthly.*

NIGHT SWEATS.

℞ Agaricin ..... gr. viiss | 5
Pulv. opii et ipecacuanhæ ..... gr. iii | 48
Pulv. althææ
Mucil. acaciæ, āā ..... ℥i 4 |

M. Ft. pilula No. 1. Sig. At bedtime for night sweats.

℞ Zinci oxidi ..... gr. iiiss | 20
Extracti belladonnæ ..... gr. ⅛ | 008
Extracti hyoscyami ..... gr. i | 06

M. Ft. Pilula No. 1. Sig. At bedtime for night sweats.
—Whitla.

LOTION FOR NIGHT-SWEATS OF TUBERCOLOSIS.

℞ Balsam Peru ..... gr. xx 1 | 33
Acidi formici ..... ℥iss 6 |
Chloral hydratis ..... ℥iss 6 |
Acidi trichloracetici ..... m. xx 1 | 33
Alcoholis—absolute ..... ℥iv 128 |

M. Sig. Apply locally as a lotion in night-sweats of tuberculosis. —Kohnstamm.

Dr. Burghart *(Med. Archives)* seldom resorts to internal medication, but occasionally uses camphoric acid. He advises cool bathing at night with plain or acidulated water or alcohol. Mentholated alcohol 1 to 2 per cent. is recommended.

℞ Atropinæ sulphatis ..... gr. i | 06
Aquæ destil ..... ℥i 32 |

M. Sig. Five drops in a teaspoonful of water at bedtime.

Ringer and Brunton seem to favor atropin as the remedy for night-sweats.

℞ Acidi camphorici ..... ℥ii 8 |

Ft. chartulæ No. viii. Sig. One powder dry on the tongue at bedtime.

THE COUGH.

℞ Codeinæ sulphatis ..... gr. vii | 5
Acidi sulphurici dil ..... ℥iss 6 |
Glycerin.
Aquæ laurocerasi, āā ..... ℥i 32 |
Syr. pruni virginianæ ..... ℥ii 64 |
Syr. tolutani, q. s. ad ..... ℥vi 192 |

M. Sig. One teaspoonful whenever the cough becomes distressing; more than six teaspoonfuls should not be given in twenty-four hours. —*Prog. Méd.*

℞ Codeinæ ..... gr. iv | 25
Acidi hydrochlorici dil ..... m. xxx 2 |
Spts. chloroformi ..... ℥iss 6 |
Syrupi limonis ..... ℥i 32 |
Aquæ destil., q. s. ad ..... ℥iv 128 |

M. Sig. One teaspoonful as occasion demands.—Murrell.

℞ Terpin hydratis ..... gr. xv 1 |
Codeinæ ..... gr. iss | 09
Extracti belladonnæ ..... gr. iss | 09
Extracti hyoscyami ..... gr. ¾ | 045

M. Ft. pil. No. x. Sig. One pill four times daily between meals. —*Jour. des. Practiciens.*

℞ Acidi hydrocyanici dil. |
Tinct. belladonnæ, āā ..... m. xxxvi 2 | 4
Ext. opii liquidi ..... m. lxiv 4 | 25
Syrupi limonis ..... ℥ss 16 |
mucil. acaciæ, q. s. ad ..... ℥iss 48 |

M. Ft. syrupus. Sig. One teaspoonful for the cough and repeat in three or four hours if necessary.
—*Manual of Med. Treatment.*

THE HEMOPTYSIS.

℞ Acidi gallici ..... gr. lxxx 5 | 33
Glycerini ..... ℥iv 16 |
Spts. vini rectificati, q. s. ad ..... ℥ii 64 |

M. Sig. Two teaspoonfuls in a tablespoonful of iced water every hour or two, then less frequently. —Yeo.

℞ Ext. hamamelidis fluidi ..... ℥i 32 |
Sig. Twenty drops every two hours.

℞ Potassii bromidi ..... ℥iiss 10 |
Tinct. digitalis alc ..... m. xlv 3 |
Aquæ ..... ℥viss 208 |

M. Sig. Two tablespoonfuls per day in cases of hemorrhage with excitement. —Whittaker.

Opinions differ as to the propriety of administering digitalis for hemoptysis, on account of increasing the contractility of the heart and increasing vascular tension.

℞ Tinct. iodi ..... ℥i 4 |
Camphoræ pulv. ..... ℥iiss 80 |
Essential oil of tar ..... ℥iiss 80 |
Spts. etheris compositi ..... ℥ss 16 |

M. Use in an inhaler and take from five to twenty inhalations at a time and repeat three or four times a day.
—M. E. Chartier.

℞ Sodii chloridi ..... ℥ss 16 |
Sig. Give two or three teaspoonfuls in as small amount of water as possible.

Skoda claims that the effect is reflex, through irritation on the gastric mucous membrane and contracts the small pulmonary arteries.

Cold applied to the chest and the use of morphin or codein is indicated in severe pulmonary hemorrhages.

℞ Ext. ergotæ fluidi ..... ℥i 32 |
Sig. One half to one teaspoonful once every two hours if necessary.

FEVER OF PHTHISIS.

℞ Quininæ sulphatis ..... gr. xxiv 1 | 50
Pulv. digitalis ..... gr. xii | 75
Pulv. ipecacuanhæ |
Pulv. opii, āā ..... gr. vi | 36
Extracti glycerrhizæ, q. s. |

M. Ft. pil. No. xxiv. Sig. One pill three times a day.
—Heim: *Manual of Ther.*

DIARRHEA OF PHTHISIS IN ADVANCED CASES.

℞ Extracti coto fluidi |
Tinct. cardamomi comp. āā ..... ℥i 4 |

Mix and triturate slowly with:

Mucil. acaciæ ..... ℥iii 12 |
Syrupi simplicis ..... ℥ii 8 |
Aquæ, q. s. ad ..... ℥vi 192 |

M. Sig. One tablespoonful at a time and repeat as necessary.
—Burney Yeo.

℞ Extracti opii ..... gr. iss | 1
Syrupi aurantii ..... ℥v 20 |
Infusi calumbæ, q. s. ad ..... ℥v 160 |

M. Sig. One tablespoonful every two hours.

℞ Salol ..... gr. xxx 2 |
Bismuth subnitratis ..... ℥i 4 |

M. Ft. chartulæ No. vi. Sig. One powder every three or four hours. Regulate the diet or adopt a milk diet.

ANOREXIA—LOSS OF APPETITE.

℞ Tinct nucis vomicæ ..... ℥ii 8 |
Tinct. cinchonæ comp. |
Tinct. cardamomi comp., āā ..... ℥i 32 |
Tinct. gentianæ comp., q. s. ad ..... ℥iv 128 |

M. Sig. One teaspoonful in water before each meal.

VOMITING OF PHTHISIS.

℞ Bismuth subnitratis ..... gr. x | 66
Tincturæ opii ..... m. ii | 12
Magnesii carbonatis ..... gr. v | 33
Misturæ tragacanthæ ..... ℥ii 8 |
Infusi aurantii, q. s. ad ..... ℥i 32 |

M. Sig. Shake at one dose. —Yeo.

BEDSORES IN TUBERCULOSIS.

℞ Alcoholis ..... ℥i 32 |
Aquæ, q. s. ad ..... ℥iv 128 |

M. Sig. Harden the skin by bathing the parts with the above solution.

THE ANEMIA.

℞ Ferri sulphatis—exsic ..... ℥i 4 |
Sodii carbonatis—exsic ..... ℥i 4 |
Acidi arsenosi ..... gr. i | 06

M. Ft. capsulæ No. xxx. Sig. One capsule after each meal three times a day.

Medicolegal.

Baking Powder Law Constitutional.—Chapter 245 of the general laws of Michigan of 1899 requires all manufacturers and sellers of all compounds or mixtures intended for use as a baking powder to affix a label to every box or can, containing the name and residence of the manufacturer, and the words, "This baking powder is composed of the following ingredients," "and none other"—following the names of the ingredients. This chapter is an amendment of an act of 1889, which required such a label to be put upon boxes and cans containing alum, in any form and shape, as a constitutent. And, as the Supreme Court of Michigan held the earlier statute constitutional, so now does it hold, in the case of State vs. Sherod, the enactment of 1899 valid, declaring that it is neither an infringement upon private rights nor class legislation.

Record Warranting Exhibition of Foot to Jury.—A young farmer had his foot caught in a hole in a depot platform and severely injured as he was attempting to board a train which was just at that moment moved a couple of car lengths. His ankle was dislocated, and its ligaments torn. His toes were turned around, and the larger bone of his ankle was pushed forward. It was also proved that his ankle would be permanently stiff. The jury awarded him $2000 damages. Taken to the Court of Civil Appeals of Texas, one of the points argued, Texas Midland Railroad vs. Brown, was that it was error, in the trial of the cause, to permit the party to exhibit his injured foot to the jury. But, it appearing from the bill of exceptions, and also from the statement of facts, that the condition of the foot was fully shown by the evidence, the court holds that the objection to the exhibition of the foot on the ground that it could not be set up in the record was not well taken. The Supreme Court of Texas has denied a writ of error.

Four Thousand Dollars for Colored Boy's Arm.—In the case of Jackson vs. the St. Louis Southwestern Railway Company, where it says that there is no law authorizing the taking off of a boy's arm at the shoulder as a penalty for trespassing on railroad or any other property, the Supreme Court of Louisiana holds that four thousand dollars is not an excessive award of damages for the loss of his left arm by a colored boy fourteen years of age. It says of the boy in question that he was poor, black, illegitimate, and ignorant, and when injured was receiving 75 cents a week for working about a negro barber shop, to which were added his earnings—probably a few dollars a week—as a bootblack. Continuing, the supreme court says that it seems to it that, being about as badly situated as a boy of fourteen who is not an invalid or a criminal could be, he was particularly in need of the arm of which he had been deprived; for that and the other arm were about all that he had to depend upon to help him through in the long struggle which lay before him, and which is hard enough even for those who are better situated and have both arms and hands. Hence, it holds the amount specified not excessive compensation for the boy.

Allowance for Nursing of Minor in Injury Case.—In Texas & Pacific Railway Company vs. Short, an action brought by the latter party to recover damages for the loss of his minor son's services, and for expenses incurred for nursing, medicines, and doctor's bills because of the boy's leg being broken and he otherwise injured by the alleged negligence of the railway company, objection was made to the trial judge's permitting the father to prove the price he contracted to pay for the nursing of his son. But the Court of Civil Appeals of Texas declares that it can not say that this was error. Yet, in such a case, it would be the duty of the court, if requested to do so, it holds, to charge the jury that the reasonable value of the services rendered, and not the contract price, would be the true measure of damages. In determining the reasonable value of the services, it then goes on to say, all the circumstances under which the services were rendered should be taken into consideration. And it holds that the father, if entitled to recover at all, could recover for the services of himself, of his wife, and of his minor son and daughter in nursing the injured boy. To this it adds that, while it is not prepared to say that the father could not recover therefor without so doing, under such a claim of damages as above mentioned, it would suggest that it would be better practice for the petition to allege that his minor son and daughter assisted him in nursing their brother.

A Crime Against Nature.—The Supreme Court of Louisiana says, in State vs. Vicknair, that it is incomprehensible why, in the common-law courts, the use of the mouth should not have been considered as much against nature as though the act were committed per anum. But the "crime against nature" being a common-law offense, made a statutory offense in Louisiana, and the definition of which, as known to the common law, having been adopted by statute, it was competent for the legislature, it holds, to amend the existing law, denouncing and defining the crime, by declaring, as was done by the statute of 1896, that a particular act, not otherwise so considered, as for example committing the offense "with the mouth," should, as well as sodomy, constitute said crime; though, no doubt, it says it must appear that the sexual organ of the one party or the other, either the agent or the pathic, was used. The crime here considered, the court goes on to say, is generally regarded as being governed in some respects by the principles of law which are applicable to rape. But it thinks that it can be readily understood why proof of emission might be considered necessary to establish the latter crime, and yet not be necessary to establish the former. And so, while the English courts and those of this country have been divided in opinion as to whether, in regard to rape, such proof was necessary, under the common law, the court holds here that, particularly as the enormity of this crime against nature consists solely in its utter bestiality, proof of emisso seminis is not necessary to conviction in a prosecution for it, as denounced by the statute of 1896; nor does it matter, in the case of an adult, whether he be charged as agent or pathic, so long as the particular act charged brings it within the definition of the statute.

Charges by Student Makes Practice Unlawful.—In Arkansas there is a statute which declares that it shall be unlawful for any person to practice or attempt to practice dentistry or dental surgery, in the state of Arkansas, without first having received a certificate from the board of dental examiners: provided, this shall not be construed as preventing any regular licensed physician from extracting teeth, nor to prevent any other person from extracting teeth, when no charge is made therefor by such persons. From this language, the Supreme Court of Arkansas holds, in the case of State vs. Reed, it is impossible to escape the conclusion that the performance of dental work, and charging and receiving pay therefor, is practicing dentistry. And it condemns the theory of the trial court in this case, which seemed to be that, notwithstanding this, yet, as the party accused of practicing dentistry without first obtaining a certificate from the board of dental examiners was, when he did the work in question, a mere student, and doing his work under the direction of a licensed dentist, he was not answerable to the law on the subject. It must be noted, the supreme court says, that if this is any defense at all, on which point it expresses no opinion, but makes this suggestion, while this relation existed in this case between the accused and a regular practicing dentist, so far as the dental work in question was concerned, yet the charge for the same was not made in the name of the licensed dentist, nor was the pay received by him. The charge was made by the accused for himself, independent of his preceptor, and so was the pay received by him. Under such circumstances, the supreme court holds, it was error for the trial judge to instruct the jury to the effect that if they believed that the accused was in he office of the regular dentist mentioned, and was working under the latter's directions and advice, he should be acquitted.

Postmaster General's Power to Prevent Fraud.—In the case of the American School of Magnetic Healing vs. McAnnutly, the United States Circuit Court was asked to restrain the postmaster at Nevada, Mo., from obeying a certain order issued by the postmaster general. That order directed

the Nevada postmaster to return to the senders thereof all letters, whether registered or not, which arrived at his office addressed to the complainants in this suit, and to stamp thereon the word "Fraudulent," or to transmit said letters to the dead-letter office at Washington, D. C., to be disposed of as other dead matter, under the laws relating thereto, when there was nothing on said letters to indicate who were the senders of the same. This order contained a finding by the postmaster general, in accordance with the acts of congress giving him his authority in the matter, that it had been made to appear upon evidence satisfactory to him that the American School of Magnetic Healing, S. A. Weltmer, the president thereof, and J. H. Kelly, its secretary, were engaged at Nevada, Mo., in conducting a scheme or device for obtaining money through the mails by means of false and fraudulent pretenses, representations, and promises. Under these circumstances, the court holds that it could not lawfully grant the temporary injunction prayed for. It says that it is manifest from an inspection of the United States statutes bearing on the subject that congress has in express terms conferred upon the postmaster general the power to prohibit the delivery of any and all mail matter to a person whom that officer, after a due investigation, finds to be engaged in conducting through the mails either a lottery or a scheme to obtain money by false and fraudulent pretenses. Nor does the court consider the statute unconstitutional. It says that it is hardly necessary to observe that, if the right to use the mails is a statutory privilege, and not property, within the meaning of the fifth amendment to the federal constitution providing that no person shall be deprived of his property without due process of law, as is held, then no fault can be found with the statute here under consideration, because it devolves on the postmaster general the duty of ascertaining by satisfactory evidence if one is using the mails to defraud, and make his right to use the mails dependent upon that finding. Neither does it think that the courts should interfere on the ground that the power conferred on the postmaster general is of an arbitrary character, and, if erroneously exercised at any time, might occasion great loss and inconvenience to the citizen.

Rape by Boy Under Fourteen Years of Age.—The Supreme Court of Florida has reversed a conviction of rape, in Chism vs. State, where the death sentence was imposed. The testimony for the accused tended to show that he was under the age of 14 years at the time the offense was alleged to have been committed. And the court holds that it was error to instruct the jury that, if they believed from the evidence that the accused was under the age of 14 years a presumption arose that he was incapable of committing the crime, and that this presumption continued until the state by competent testimony overcame it, and established capacity by showing that he had reached the age of puberty to the exclusion and beyond a reasonable doubt. It says that the rule of the common law is that a boy under the age of 14 years is conclusively presumed to be incapable of committing the crime of rape; and this rule, it holds, is still in force in the state of Florida. All the American courts, without exception, it says, admit that, at common law as administered in England, a boy under 14 years old could not commit the crime of rape, not because he had not then arrived at the age of discretion to discern right from wrong, but because he was deemed to be physically incapable of committing the particular crime of rape. But several American courts, it continues, have refused to apply absolutely the common-law rule in their respective jurisdictions, on the theory, it would appear from the reasoning employed, that, as the rule originated in England under climatic and other conditions surrounding the English people showing that puberty did not develop in males before the age of 14, it should not be rigidly applied here, where experience frequently shows a development of puberal capacity before that time. In other words, the common-law rule, according to this view, is deemed sufficiently flexible to admit of application to actual facts as they may be shown to exist, and so it is laid down that before the age of 14 a presumption exists of incapacity, but that it may be overcome by proof. This doctrine impresses the court with merit, and it says that it is not at all surprising that some of the courts in this country have adopted it. Yet, where, as in Florida, the common law of England in relation to crimes has been adopted by statute, and there is no enactment on the subject of the age under which a male can not commit the crime of rape, the courts, the Supreme Court of Florida holds, are not authorized to set the common-law rule aside for the reason that the climatic or racial conditions of the people differ from those of England, where the law was developed. If such conditions demand a change of the common law, it is for the legislature to make it and not the courts.

Societies.

Coming Meetings.

American Public Health Association, Indianapolis, Ind., Oct. 22-26.
Medical Society of Virginia, Charlottesville, Oct. 23.
Southern Surgical and Gynecological Association, Atlanta, Ga., Nov. 13-15.
Oklahoma Territory Medical Society, Oklahoma City, Nov. 15.
The Tri-State Medical Association of Mississippi, Arkansas and Tennessee, Memphis, Nov. 13-15.
Indian Territory Medical Association, Muscogee, Dec. 4-5.

The Fresno County (Cal.) Medical Society met at Fresno, October 2. Dr. J. H. Parseghian read a paper on the "Treatment of Rheumatism."

The Springfield (Ohio) Academy of Medicine recently held its second meeting of the season, when Dr. M. V. Patton read an article on "Medical Ethics." Dr. Louis L. Syman presented a case of musical heart.

The Columbus (O.) Academy of Medicine, at its session, October 1, listened to and discussed papers by Dr. Herbert M. Platter, on "The Recent Epidemic of Smallpox in Columbus" and "The Diagnosis of Tubal Pregnancy Before Rupture."

The Cambridge (Mass.) Medical Improvement Society met for its regular monthly session, September 24, and listened to a paper by Dr. Joseph S. Lockhart on "Infantile Hemiplegia" and a report by Dr. Walter J. La Marche of two interesting abdominal cases.

The Orange County (Cal.) Medical Association held its October meeting on October 2, at Westminster. Dr. H. S. Gordon presented a paper on "Pelvic Inflammation"; and Dr. F. E. Wilson one on the "Microscope in Diagnosis." The next meeting will be held in Santa Ana.

The Fairfield County (Conn.) Medical Society held its one hundred and eighth semi-annual meeting at Westport Sanatorium October 9. Papers were read by Dr. William B. Coley, New York City, on "Female Hernia," and Dr. J. Murray Johnson, Bridgeport, on "Pulmonary Surgery."

The Clinical Society of Washington, D.C., met after the summer vacation, on October 8, and elected the following officers: Dr. Charles C. Marbury, president; Dr. Duff G. Lewis, vice-president; and Dr. J. Carlisle De Vries, secretary and treasurer. Dr. Wallace Johnson read a paper on "Clinical Pathology," which was discussed by many of those present.

The Clinton County (Ia.) Medical Society held its quarterly meeting at Clinton, October 2. A paper was read by Dr. Harry R. Reynolds on "Specific Tertiary Lesions." A paper was also presented by Dr. Robert E. Everhart on "Rheumatism," and Dr. John F. H. Sugg opened a discussion on the "X-Ray in its Medico-Legal Relations."

The Lucas County (O.) Medical Society met at Toledo, October 5. Dr. Clarey E. Stewart read a paper entitled "The Doctor," and Jesse L. Baird read a paper on "Mercurials—Some of their Attributes and Uses." A general discussion on "Should Chloroform and the Obstetric Forceps be Used More Freqeuntly in Labor Cases?" then took place, which was opened by Drs. Watson, Gillette and Strausz.

The Madison County (Ind.) Medical Society held its quarterly meeting at Pendleton, October 2. Papers were read by Dr. John B. Fattic, Anderson, on "Treatment of Electrical

Injuries"; Dr. Anthony E. Otto, Alexandria, on "Hay-Fever and its Treatment," and Dr. Frank P. Nourse, Alexandria, on "Pelvic Inflammation." Dr. John W. Cook, Pendleton, gave some reminiscences of a recent trip abroad.

THE DENVER AND ARAPAHOE (Colo.) MEDICAL SOCIETY met in Denver, October 9. Papers were read by Dr. Francis H. McNaught on "The Treatment of Puerperal Infection"; by Dr. Horace G. Wetherillon, "The Prevention of Puerperal Septicemia," and by Dr. Charles A. Powers, on "The Surgical Importance of Apparently Simple Carbuncles and Furuncles of the Upper Lip" and "Abdominal Testicular Ectopia, Associated with Inguinal Hernia-Management."

THE THURBER MEDICAL ASSOCIATION held its 47th annual meeting at Milford, Mass., October 4. The officers elected for the ensuing year were: President, Dr. Nathaniel C. B. Haviland, Holliston; vice-president, Dr. Ralph C. Fish, Hopedale; secretary, Dr. John M. French, Milford; treasurer, Dr. Le Grand Blake, Milford. The prize for the best paper read during the year was voted to Dr. John M. French, Milford, for his paper on "The Treatment of Acute Croupous Pneumonia." The anniversary address was delivered by Dr. Wilfred W. Browne, Blackstone, on "The Lights and Shadows of a Physician's Life."

THE SOUTHWESTERN TRI-STATE MEDICAL ASSOCIATION, composed of physicians from Texas, Oklahoma and Indian Territory was organized at Dallas, Tex., October 1. Dr. Vene P. Armstrong, Dallas, was elected temporary chairman, and Dr. John O. McReynolds, Jr., Dallas, temporary secretary. The code of ethics of the AMERICAN MEDICAL ASSOCIATION was adopted. The following officers were elected: Dr. Henry K. Leake, president; Dr. J. W. Lowe, Holdenville, I. T., first vice-president; Dr. Charles R. Hume, Anadarko, Okla., second vice-president; Dr. Hugh L. McNew, Honey Grove, Tex., third vice-president; and Dr. Samuel E. Milliken, Dallas, secretary and treasurer.

Mississippi Valley Medical Association.

Twenty-sixth Annual Meeting, held at Asheville, N. C., October 9-11, 1900.

President Dr. Harold N. Moyer, Chicago, in the chair.

Addresses of Welcome on behalf of the city, state and local profession were delivered by Hon. Theo. F. Davidson and Dr. John H. Williams.

PRESIDENTIAL ADDRESS.

DR. MOYER referred to matters of general interest to the profession. He alluded to an address which was delivered at the recent International Medical Congress by a distinguished American colleague, who saw fit to discuss the old code question. The speaker (Dr. Moyer) thought it unfortunate that this subject, long since dead, but not buried, should be embalmed in the records of that Congress. The medical profession of America does not need an apologist for its standard of medical education to-day, and in support of this contention the speaker quoted from an editorial in the *London Lancet* of comparatively recent date.

As to medical societies, there can not be too many of them. In no other country are they so numerous as in America. Abroad these societies are for the few; in this country they are for the many, and it is to their collective voice, speaking in no uncertain tones, that the profession owes the uplift of medical education.

The speaker then discussed the relation of the profession to the law. The passage of medical-practice acts has been urged by the medical profession, and physicians have been distinctly misunderstood in their attitude toward such legislation. Legislators feel in some way that the medical profession wishes to put a fence around the practice of medicine and that physicians, being on the inside, may fatten on it. This is not true. Physicians do not urge the passage of medical-practice acts for their personal aggrandizement, but simply to protect the people, to prevent the illegal practice of medicine by unqualified persons and by quacks.

If anything can be said in criticism of the medical profession in this country, it is the overweening inclination toward specialism. The physician should spend several years in general practice before adopting a specialty. Specialism has wrought great good for medicine, but the profession should see that it is not overdone. If a physician desires to acquire a broad general culture, it can only come from general practice. The selection of a specialty should, like matrimony, come naturally, and without being forced.

ABDOMINAL VERSUS VAGINAL HYSTERECTOMY.

DR. H. O. WALKER, Detroit, Mich., read a paper on this subject. The question of the best approach surgically to the uterus and adnexa has not been settled, judging from the amount of discussion of late on this topic. Cancer of the uterus is not an infrequent cause of death in women. The recurrence of cancer of the uterus is very important and is immediately connected with the method of its removal. The manner of recurrence of cervical cancer is either by extension into the broad ligaments, vagina downward, and other contiguous parts, as the bladder and rectum, and occasionally the body of the uterus; or by metatases, through the lymph-channels and by distant direct implantation. The surgeon is to be governed by the method of operation that will offer the best advantages in avoiding a recurrence of the disease, and in order to illustrate the two routes he reported two interesting cases, in one of which he could not have operated as successfully by the vagina as through the abdomen. In the other case the vaginal route was indicated, and this operation was done. All things being equal, the abdominal route offers a more complete hysterectomy than the vaginal method. 1. The surgeon is better able to see what he is doing. 2. He can control hemorrhage more efficiently and completely than by the vaginal route, where he is working in a dark cavity. There is less liability of slipping of the ligatures, and if they should slip, they are reached more easily than by the vaginal section. 3. The danger to the ureters is minimized, and, if injured, the opportunity for their repair is much better; while if they are injured by the vaginal route, the surgeon would have to do an abdominal section to effect repair. 4. The prevention of sepsis is more certain by the abdominal than by the vaginal route, aided, in the former instance, by the Trendelenburg position, which gives opportunity for full protection of the intestines and peritoneum; while in the latter the opportunity for protection is limited, as it is an impossibility to secure perfect asepsis in the vagina where there has been a long-standing infective disease.

CANCER OF THE UTERUS AND ITS TREATMENT.

DR. R. S. SUTTON, Pittsburg, contributed this paper. Cancer operations should not be recommended as curative, but as palliative and therefore useful. Total vaginal extirpation of the uterus at or after time of climacteric, should find a place as prophylactic treatment against cancerous disease. This paper consisted of a compact review of the anatomy, pathology, diagnosis and present method of treatment.

The author expressed the opinion that treatment for existing cancer of the uterus had probably reached its complete evolution. In view of the ultimate results of this treatment, which he heartily endorses, because there is none other known to take its place, he asks the question, cui bono?

He then discussed the question of prophylaxis, and showed that the average age of his patients operated on was 43 years and a fraction, and claims that if these patients had all been subjected to total vaginal extirpation, at the average age of 40 years, all of them would have escaped cancer of the uterus; that according to his own statistics, but 4 per cent. of the cases would have died; whereas, nearly 100 per cent. of the cases did die, within a period of two or three years, after operations for cancer.

He urged greater attention to the early repair of lacerations of the cervix, and a more painstaking observation, and consideration by physicians at large of that train of symptoms preceding, and leading up to, the development of cancer of the uterus. He unequivocally recommends radical surgical treatment in all such cases, and clearly announces that if we are

to diminish the number of uterine cancer cases, and consequent mortality in the future, it must be done in forestalling the disease.

In the discussion, Dr. Edward W. Lee, St. Louis, favored the abdominal route in the majority of cases, for the reason that it is easier of performance; the surgeon can see what he is doing; he has a more perfect control of the tissues, and can do a more thorough operation. The only condition in which he believes the vaginal operation is justified is in cases of small, uncomplicated fibroid tumors of the uterus which can be easily shelled out.

Dr. Chauncey D. Palmer, Cincinnati, said that until within the past few years the vaginal method was preferred to the abdominal. It is important in cases of cancer of the uterus that all of the diseased structure be removed; consequently this can be done more easily and thoroughly by the abdominal route.

Dr. J. Wesley Bovee, Washington, mentioned three classes of cancer of the uterus, where the removal of whatever other structures may be involved, is advisable. In very feeble patients, who are not able to stand a prolonged or tedious operation, he favors the combined method advocated by Ries, Clark, Werder and others. He has done the combined operation in 13 cases, all of whom are living, with 2 recurrences.

Dr. A. H. Cordier, Kansas City, Mo., said, in cases in which there is extensive involvement of the cervix by the cancerous process, as involvement of the bladder and rectum, patients derive much benefit by a thorough curettage of the cancerous mass, then the Paquelin cautery, and packing of the parts with carbid of calcium. Along with this he uses the old Goodell injection (vaginal) of permanganate of potash.

Dr. Hugh A. Cowing, Muncie, Ind., urged upon the general practitioner the importance of making an early diagnosis of cancer of the uterus.

Dr. William F. Barclay, Pittsburg, thinks the general practitioner is blamable for not referring cases of cancer of the uterus early to specialists. For years he has made it a rule, when in doubt as to the diagnosis of disease of the uterus, particularly when the patient complained, to refer the case to a specialist, and has been satisfied with the results.

POST-OPERATIVE INTERNAL HEMORRHAGE.

Dr. A. H. Cordier, Kansas City, drew the following deductions: 1. In diagnosing post-operative hemorrhage the history of the patient will aid much. 2. Symptoms of shock and hemorrhage are very similar. 3. In suspected cases a single stitch in the incision cut will tell. 4. In cases in which bleeding is anticipated, a tube should be used. 5. The surgery must be quick and decisive in these cases. 6. Large quantities of normal saline solution will save many cases. This should be used both per rectum and into the veins. 7. Strychnia, belladonna, etc., will not control bleeding from the uterine or ovarian artery any better than from the radial or temporal. 8. The surgeon should do what his surgical conscience tells him is right.

INTERMITTENT HYDROPS OF THE KNEE.

Dr. George W. Cale, Springfield, Mo., reported the case of a woman 45 years of age. The first appearance of her trouble began five years ago. There was no history of injury. There was a rapid accumulation of fluid in the left knee-joint, but which was not painful. This disappeared in from one to four weeks, with or without treatment. The disease would recur at periods varying from one to six months.

VENTRAL HERNIA FOLLOWING LAPAROTOMY.

This paper was read by Dr. B. Brindley Eads, Chicago. The occurrence of ventral hernia as a sequence of abdominal section is so common that it should command thoughtful consideration. The author urged the adoption of those methods which personal experience has demonstrated to be of the greatest use, both immediate and remote. He quoted Greig-Smith as saying that ventral hernia is a mere stretching of scar tissue, but the essayist regards it as a stretching not only of the scar tissue, but of all of the tissues of the abdominal wall at the site of its occurrence.

As intact innervated muscular fiber is the only safeguard against hernia following laparotomy, the first rule is to make the abdominal incision parallel, or nearly so, with the direction of the motor nerves, and of the most important muscular fibers supplied by these nerves. In considering the incision the following points must be taken up: 1. The length is largely dependent on the thickness of the superficial fascia; it must be sufficient to allow free access to the muscles whose functional integrity is essential to success. 2. The length must be relatively greater than when muscular fibers are to be separated instead of divided. 3. It must vary with the pathological condition for which the operation is performed. 4. An opening of sufficient size must be secured for thorough exploration and to obtain the requisite degree of precision and rapidity in manipulation. 5: A long incision through the skin and superficial fascia does not predispose to hernia. 6. It lessens the mortality by providing ample space for the protection of surrounding viscera. 7. It lessens shock by diminishing the time required for the operation, and also the duration of the anesthesia.

Several incisions were mentioned by the essayist. The difficulties he has experienced in reaching the appendix through the McBurney incision in acute suppurative cases of appendicitis have caused him to devise another method of approach in a more dependent part. This incision overlies the outer border of the cecum and leads directly to the appendix. It is slightly curved outward and downward, crossing an imaginary line drawn between the anterior superior iliac spines. The center of this curve is from an inch to an inch and a half to the inner side of the right superior iliac spine. The skin and superficial fascia are incised for about two inches. This freely exposes the aponeurosis of the external oblique, which is separated by means of the dry dissector, or the handle of a scalpel, in the direction parallel to its fibers, and well retracted. This brings into view the transversely arranged fibers of the internal oblique and transversalis muscles, and the twelfth abdominal, ilio-hypogastric, and possibly the ilio-inguinal, nerves which are in turn retracted in order to reach the transversalis fascia, which, together with the peritoneum, is divided transversely. The advantages gained by this incision are: 1. It provides easy access to the diseased area. 2. It enables the operator accurately and securely to protect the peritoneal cavity from infection. 3. It lessens liability to breaking down the inner limiting wall of adhesions. 4. It affords a better opportunity to open the abscess cavity from the outer side. 5. It favors drainage. 6. It has not been followed in the author's experience either by appendicular fistula or post-operative hernia.

GANGRENE OF THE SCROTUM AND PENIS.

Dr. E. H. Richardson, Atlanta, Ga., narrated the history of a case which showed the initial lesion to have been an abrasion of the skin near the os pubis, with probably infection from the erysipelatous cocci at this point, and later a mixed infection from the streptococcus of gangrene, terminating in the destruction of the gangrenous process of the entire integument of the penis and of three-quarters of the scrotum. A plastic operation was made, with the result that the integument of the penis and testes was preserved. The patient made a perfect recovery.

TRACHELOPLASTY.

Dr. Henry P. Newman, Chicago, read a paper on this subject. In order to maintain a condition of normal health in the body, it is necessary that all of the organs properly perform their functions. The author calls attention to the great importance of the function of the cervix uteri in relation to disease in women. In former times cervical lesions were recognized as a fruitful source of gynecic evils, and many operations and instruments were devised for their correction. Emmet's trachelorrhaphy, once so popular, has ceased to be adaptable to the needs of to-day in repairing cervices. Dr. Emmet, in conceding this himself, and offering amputation as a substitute, states that the great advance in the obstetrical art and the methods of caring for a lacerated cervix in labor have altered the character of surgical pathology, so that trachelorrhaphy, as formerly practiced, is rarely called for.

The author finds the indications for plastic work on the cervix still widespread enough to justify the presentation of a new method of operating. This he calls tracheloplasty, it being plastic work designed not only to restore normal contour and relation, but to re-establish proper function. The distinctive features of the methods are the use of a specially designed knife, the shape of the flaps in the anterior and posterior lips of the cervix, clean, smooth-cut surfaces, accurate approximation of flaps, the certainty of restoring the proper lumen of the canal, and the simplicity of the after-treatment. Neither tracheloplasty, nor any one operation of the kind, should be relied on to correct all the ills which accrue from lacerations in child-bed. It is frequently necessary to do such simple work as shortening the round ligaments, or suspensio uteri, where there is a displacement of the uterus; divulsion and curetting where disease has extended to the endometrium above; reparation of the pelvic floor where, through relaxation or trauma, there is a hernial condition of the rectum, bladder, vagina or superimposed viscera; sometimes even the opening of the abdomen for plastic work, or resection of pathological conditions of the ovaries, tubes, etc. Any one or two of these accessory operations may be necessary to restore the patient, although the disease or deformed cervix may have been the essential, perhaps the sole, etiological factor in the case.

MIDDLE-EAR DISEASE IN ITS RELATION TO THE CRANIAL CAVITY.

DR. O. J. STEIN, Chicago, read a paper on this subject, in which he pointed out the necessity of recognizing the importance of possible intracranial complications in every case of middle-ear disease. The various avenues of infection were dwelt on at length, these being illustrated by beautiful drawings and specimens. The symptomatology of intracranial phlebitis, thrombosis and abscess was discussed, and several instructive cases reported. In connection with this paper, Dr. J. Holinger, Chicago, gave an interesting stereopticon demonstration.

ADDRESS IN MEDICINE.

DR. I. N. LOVE, New York City, selected for his subject, "Nutrition and Stimulation." Continuance of life, beginning with the original protoplasm, the cell, depends on proper nourishment. The recognition of this fact is essential in all the work of the physician. The proper nutrition of the new being, from the very beginning, prior to birth, should be carefully looked after by the careful physician. After birth the security of the infant depends on the proper appreciation of its proper feeding. From infancy to maturity this should be the essential thought of the parent and the doctor, who should ever realize his importance as the helper of the parent in the building-up of a complete man or woman. The entire scheme of tissue-building, of repair, of maintenance of the mechanism of the human body involves not only nutrition, but perfect elimination, and the two together are expressed in the term metabolism. Interrupted metabolism tends toward organic disease, and finally death. Perfect metabolism means perfect health.

Stimulants are of value, if used in the right way and at the right time. In the healthful condition they are not needed. They are essentially a luxury. All luxuries should be used with the greatest care, and only the thoroughly healthy can indulge safely in luxuries. Stimulants are divided into two classes, namely, those that are exclusively remedial, and those that come under the head of luxuries associated with every-day life. Of all the stimulants, alcohol stands first. It is probably the most prompt diffusible stimulant we have. There are arguments for and against alcohol as a food.

Coffee and tea are essentially domestic pleasures, and while seemingly harmless, they are potent whippers-up of energy and should be used with great care. Tobacco has never been thought of as a food. It is primarily a stimulant, but, like all other stimulants, it is secondarily a depressant. It is a luxury, pure and simple. Morphin, cocain and others of their class are of great value to the profession, but improperly used are more deadly in their effects than the scalpel in the hands of the unskillful.

TREATMENT OF PERIRECTAL ABSCESSES.

DR. JOHN L. JELKS, Memphis, Tenn., read a paper on this subject. Rectal abscesses, when properly treated, are not so serious as when it was the practice to use poultices and await pointing. These abscesses need not result in fistulæ, unless they are the result of malignant diseases, as tuberculosis, cancer and syphilis. The fault to be found in a simple incision and drainage of these abscesses is that their walls are not gotten rid of; hence this barrier to general infection or infection of other and deeper structures remains to continue an irritation and to cause suppuration. In many cases the abscess wall becomes calloused, and all efforts to establish granulation are futile. When he is able to elicit fluctuation, he opens freely and hastily irrigates through an irrigating curette, attached to a fountain syringe, until the irrigating fluid comes away free from debris; then with a sharp irrigating curette he removes all of the abscess wall, thereby converting the cavity into a surgical wound. He uses formalin solution in irrigating these cavities and packs them with iodoform gauze. After thus treating these cases he expects no further suppuration. Since using formalin solution in irrigating these cavities he has, in the after-treatment of them, seldom noticed any suppuration.

Superficial abscesses should be dealt with in the same manner; or they may be frozen and excised as the surgeon would a tumor. They are, when otherwise treated, liable to infect deeper structures. Local anesthesia will suffice, and curettage can be properly practiced with it. If the wound is painful, or the formalin solution irritating even when very dilute, antibrule in 50 per cent. solution is to be preferred. In rectal surgery he has not found the objections to the use of formalin which have been referred to by rhinologists and laryngologists.

SIMPLE OPERATION FOR HEMORRHOIDS: ENUCLEATION.

DR. J. RAWSON PENNINGTON, Chicago, contributed this paper, which was profusely illustrated. He gives a cathartic the second night before the operation, a saline the following morning and a bath, and colonic flushing the night before. The next morning he gives an enema of from one-half to one pint of cool water, and operates two hours later. He emphasizes the importance of carefully examining the entire rectum. He grasps each anal quadrant at the muco-cutaneous junction with a pair of forceps; the anus is everted, and the internal tumors exposed. Seizing with the hand the forceps attached to the posterior quadrant, he fully everts it, and, with a pair of scissors curved on the flap, cuts off the redundant membrane only, which is usually about one-third or one-half of the uppermost part of the hemorrhoidal node. This permits the blood in the tumor to escape. All of the angiomatous tissue is carefully removed, when the remaining wall collapses. Each quadrant in regular order is treated in a like manner. A stream of hot sterilized water flows over the field continuously during the operation. Spurting vessels, if any, are caught with forceps and thoroughly twisted. Should this fail to control hemorrhage, he throws a ligature around the vessel and ligates it. The operation having been completed, he introduces a rubber-covered tampon, which has been fully described in previous articles by the author.

The advantages of this method are: There are no stumps to slough, nor nerves caught and squeezed, which will cause excruciating pain, as when the ligature is used; nor are the nerves and tissues burned to a crisp, as when the clamp and cautery are employed. The formation of stricture is obviated.

The patient is given a cathartic and the tampon painlessly removed at the end of forty-eight hours. There is no pain nor bleeding with the movement of the bowels. After the bowels have moved the patient is instructed to keep them soft for two or three weeks by taking compound licorice powder or Apenta water, the latter being very palatable and effective. He has performed this operation in fifty cases, with more satisfactory results than he has obtained by any other method.

OBSTIPATION.

DR. STERLING B. TAYLOR, Columbus, Ohio, read this paper. Obstipation was defined, and a comparison of obstipation,

constipation and costiveness made. The causes of obstipation were dwelt on and classified. Hypertrophy of the rectal valve was emphasized as the usual cause of obstipation. The essayist defended the views of Martin and his method. The symptomatology of the affection and palliative and radical treatment were discussed, the author closing his paper with the citation of several cases.

TUBERCULOSIS OF THE SPINE.

DR. ALEXANDER C. WIENER, Chicago, contributed a paper on this subject. He made a plea for early diagnosis before deformity is noticeable. Extension and hygienic treatment are essential in avoiding complications, such as paresis and gravitation abscess. He exhibited a specimen which illustrated the possibilities of forcible correction of the spine. He narrated cases of psoas abscess in which he had effected a cure with injections of concentrated carbolic acid.

MEDICAL AND SURGICAL TREATMENT OF ACUTE AND CHRONIC CERVICAL LYMPH NODES.

DR. HORACE H. GRANT, Louisville, dwelt on the purpose and function of the lymphatic glands. He showed how they may be rendered useless and harmful by disease and disintegration. He pointed out the limitations of medical and expectant treatment, and outlined the indications for the various surgical procedures.

ADDRESS IN SURGERY.

DR. CHARLES A. WHEATON, St. Paul, chose for his subject "Fulminating Appendicitis." He said that every case of appendicitis is and by rights ought to be considered surgical, because the surgeon's training specially qualifies him to best interpret the meaning of the symptoms encountered. Every case of so-called fulminating appendicitis should be operated on as soon as its distinctive characteristics are known. High temperature and accelerated pulse, associated with local pain and rigidity, are strong presumptive evidences of malignancy in the attack, and if associated with vasomotor disturbances, are practically proof positive of perforation. The surgeon who refuses the only chance that drainage may give even the most desperate cases is false to himself, and fails materially in discharging his obligations to his patient, obligations which the patient has a right to expect at his hands. A puncture in the median line, in the loins or, in a woman, in the posterior cul-de-sac, under local anesthesia, does not add to the danger of the condition, and it materially aids nature in the awful uphill fight. In short, in every fulminating case, operate first and philosophize afterward.

SUBARACHNOIDEAN INJECTIONS OF COCAIN FOR OPERATIONS BELOW THE DIAPHRAGM.

DR. CARL H. ANDERSEN, Chicago, referred to the work of Tuffier, Bier and others in this comparatively new field, saying that sufficient credit had not been given to Leonard Corning as the originator and adviser of this method of anesthesia. He described its technique, which is substantially that outlined by Tuffier, and reported six cases in which he had resorted to the method.

CASE 1.—Hydrocele, with vague history. Patient, colored, 28 years of age, strong and healthy. Subarachnoidean injection of 15 minims of 2 per cent. solution of cocain. Anesthesia complete. On opening the scrotum sarcoma of the testicle was found and removed. Ninth day after operation patient died from pulmonary embolism.

CASE 2.—Varicose veins of the leg. Injection of 8 minims of 2 per cent. solution of cocain. Anesthesia lasted five hours and ten minutes. No pain during operation. Perfect recovery.

CASE 3.—Trachelorrhaphy. Cocain anesthesia. As soon as operation was finished the patient fainted and remained in that condition for two hours. Under strychnia and salt water per rectum she rallied and recovered.

CASE 4.—Amputation of toe in a man 72 years of age. Seven minims of 2 per cent. solution of cocain injected. Uninterrupted recovery.

CASE 5.—Operation for suppurative appendicitis. Patient, woman. Operation performed at 10 a.m.; at 2 p.m. patient showed symptoms of medullary irritation, pain in the back, and severe headache. It is now several days since the operation was done, and patient has had a terrific headache ever since.

CASE 6.—Version and use of forceps. At the suggestion of Dr. Harold N. Moyer, Dr. Andersen injected 16 minims of a 4 per cent. solution of eucain B in this case, with very satisfactory results. Patient suffered no pain whatever. Eucain B can be perfectly sterilized by boiling.

Dr. Andersen spoke of the difficulties attending the sterilization of cocain, and outlined a method by which this can be accomplished. He regards lumbar puncture as a serious operation, and urged practitioners to be exceedingly cautious in employing it. These cases were reported for the express purpose of warning the profession that the method is far from harmless, and if it is employed indiscriminately it will lead to disastrous consequences.

DR. HAROLD N. MOYER, in the discussion, said that if advised as to the use of this method of anesthesia, he would say, do not use it. No surgeon should undertake it unless he has a well-equipped laboratory. The method is at best in its experimental stage, and further research and experiments should be carried on in well-equipped clinics until the possible dangers of this method are better and more clearly understood. Among the dangers are the toxic properties of the cocain. A 4 per cent. solution of eucain B can be used with absolute safety. It is about one-third as toxic as cocain and one-half as anesthetic as cocain, but it can be absolutely sterilized. The danger of infection from such injections is considerable, and should not be overlooked. As to the remote dangers from this form of anesthesia, cases have not been observed sufficiently long to enable surgeons to say whether or not there are such dangers.

TREATMENT OF TUBERCULAR AND PURULENT HIP-JOINT DISEASE WITH LARGE SPECULUM DRAINAGE AND PURE CARBOLIC ACID.

DR. A. M. PHELPS, New York City, read a paper with this title. All abscesses, tubercular or purulent, should be opened as soon as the diagnosis is made, for the purpose of exploration; secondarily, for drainage, and for any surgical procedure which may be deemed advisable. Excisions should be performed when the acetabulum is extensively diseased, the diseased tissues removed, and the joint thoroughly washed out with pure carbolic acid, then with pure alcohol, and finally with a 2 per cent. solution of carbolic acid, and as large a drainage-tube of glass, as the wound will take, should be inserted. Through this large drainage-tube the packing for drainage purposes can be made. The large glass speculum enables the operator to watch every pathological change which takes place throughout the wound. It keeps the soft parts widely separated, and prevents their union until after the bone has granulated up and healed. It enables the operator to dress his patient without doing violence to the granulating surfaces of the wound, and inflicting unnecessary pain. All rubber drainage-tubes should be entirely discarded, as they are filthy, collapsible, and are a source of infection. The carbolic acid is absolutely neutralized by the action of the alcohol. Local carbolic poisoning, and even when the drug is taken internally, is neutralized by the action of the alcohol. Pure carbolic acid applied locally is a specific for erysipelas, the points of which were brought out in the paper.

PULMONARY TUBERCULOSIS IN INFANCY AND CHILDHOOD.

DR. FRANK P. NORBURY, Jacksonville, Ill., said that this disease is not a rarity among children, as the utilization of available post-mortem material shows. Heredity is of etiological importance, but it has lost its prestige as compared to its former standing. Modern scientific inquiry has shown that infection is the etiological factor par excellence. Direct heredity can account for a limited number of cases. The infection theory is proved by the lateness of the appearance of disease; few cases occur during the first year of life, and steadily increase thereafter. The mode and route of infection are important considerations. Northrup, Carr, and others have shown that tuberculosis starts more frequently in the thorax than elsewhere. Pulmonary affections, such as whooping-cough, influenza, etc., create favorable conditions for infection. Enterocolitis and gastroenteritis create portals for intestinal infection. Milk is a source of infection; likewise tuberculous meat.

The diagnosis may be confounded with cases of malnutrition. Bovaird says two evidences of early invasion are "progressive emaciation, not explained by other disease; continued elevation of temperature similarly conditioned." Differential diagnosis from bronchopneumonia can be made only by laboratory methods. Acute miliary tuberculosis and bronchopneumonic tuberculosis are most frequently found in infants and children.

The complications are meningitis, empyema, and involvement of bones. The prognosis is grave in most all cases, but lesions of lungs may heal under favorable conditions. With reference to treatment, prophylaxis during infancy should include attention from birth, if mother is tuberculous; also good hygienic, open-air treatment; climatic change, when possible. The symptomatic care should be the same for children as for adults. Good nutrition should be maintained, and as little medicine given as possible. Creosote is recommended by the author, also simple tonics.

THE PHYSICIAN AS A SANITARIAN.

DR. HUGH A. COWING, Muncie, Ind., read a paper on this subject in which he discussed preventive medicine; hygiene of infection; the physician as a factor in the spread of infection; the physician and the health officer; health legislation, and the physician and the public schools.

THE PHILOSOPHY OF THE SCIENCE AND ART OF MEDICINE.

DR. WILLIAM F. BARCLAY, Pittsburg, said that thoughtful minds should be engaged in ascertaining truth from falsehood. True and false philosophy should be appropriately applied to results obtained in rational conclusions. The philosophy of medicine is the comprehension of the truth in the investigation of the science, enabling one to arrive at rational conclusions in the study of physical laws which govern organized matter in their normal and pathological condition.

ASTHMA.

DR. B. ALEXANDER BATE, Louisville, stated that Loomis, Trousseau, Salter and others, have considered asthma a diathetic neurosis. Haig attributes it to the effect of uric acid on the circulation in the thorax. Modern opinion seems to regard asthma as a neurosis of the pulmonary plexus. In bronchial asthma uric acid in the blood so alters nutrition as to cause a neurosis of the branches of the pulmonary plexus, thus inducing hyperesthesia and engorgement of the bronchial mucosa, spasmodic contraction of the muscular fibers, and the various manifestations of metabolism. Asthma frequently alternates with such diseases of the arthritic diathesis as neuralgia, migraine, angina, and gout. Clearing the blood of uric acid has relieved asthma only to be followed by gout, as the uric acid was precipitated into the tissues. Asthma may be said to belong to the class of uric-acid diseases due to the effect of high arterial tension in contradistinction to those produced by precipitation of urates into the tissues. Cases are recorded in which mediastinal tumors pressing on the pneumogastric nerve continuously first cause asthmatic paroxyms during the alkaline tide. Pressure explains the neurosis, and the time of the paroxysm manifests the uric acid. Modern treatment has been able to cut short the attacks in most instances, and often to prevent their return. Prophylactic treatment should embrace proper hygiene and diet. Prophylaxis should be begun in the children of lithemic individuals. The therapeutic measures embrace the care of the attack and treatment during the interval. After the removal of the exciting cause the treatment consists in the use of such remedies as overcome arterial tension by freeing the blood of uric acid. The treatment of the interval consists in the use of such drugs as eliminate uric acid from the system, and the adherence to such a diet as permanently keeps down arterial tension. Rational treatment, based on the theory of uricacidemia as the chief factor in the production of asthma, has been most satisfactory in the hands of the essayist.

CURABILITY OF INEBRIETY BY MEDICAL TREATMENT.

DR. T. D. CROTHERS, Hartford, Conn., said that inebriety is a neurosis, usually self-limited, and very largely curable. The craze for drink is symptomatic. The real causes are central nerve irritation, exhaustion, poisoning, and starvation. The success of the treatment depends on accurate knowledge of the causes and conditions present in each case, and the accurate application of general means and measures for their removal. Each case requires special means and measures, particularly adapted to meet the conditions present. The family physician as well as the specialist should treat these cases successfully.

FURTHER OBSERVATIONS ON THE CLINICAL APPLICATION OF THE SUPRARENAL CAPSULE.

DR. W. H. BATES, New York City, regards the aqueous extract of the suprarenal capsule as the most powerful astringent hemostatic, and heart tonic known to the profession. It lessens congestion of the eye and of other organs. The extract is not irritating or poisonous, and, unlike other powerful drugs, is never in his opinion contraindicated. In short, the profession has no remedy which is so useful in all forms of inflammation.

CLINICAL VALUE OF PURGATIVE MINERAL WATERS.

DR. EDWIN ROSENTHAL, Philadelphia, discussed this subject. He spoke of natural and artificial mineral waters; simple, thermal, common salt, or muriated waters. He dwelt on the waters mostly met with in commerce, spoke of their chemistry, names, mode of action, uses, method of selection of a special purgative water, etc.

WHAT THE LAW REQUIRES OF A SURGEON.

DR. DUDLEY S. REYNOLDS, Louisville, stated that a surgeon must possess a reasonable familiarity with the science of his profession; he must exercise reasonable skill for the locality in which he practices, and must devote due diligence and care in attending to his patient. If the patient declines to submit to that treatment which in the judgment of the surgeon is most appropriate, and he does not abandon the case at once, he assumes liability for the result of failure to do that which in his judgment was best for the relief of the patient.

DIFFERENTIAL LEUCOCYTOSIS.

DR. L. H. WARNER, Brooklyn, read this paper. Experiments in recent times have given us a better insight into leucocytosis. It has been demonstrated to be due to three causes—digestion, inflammation, and infection. Physiological and biological experiments have proved that by means of medication a true picture of leucocytosis may be produced, but which in reality represents leucocyto-diuresis, a condition very desirable in the treatment of disease and a recognition of which is of the greatest value when hematology is called on to aid in arriving at a correct diagnosis.

The following officers were elected for the ensuing year: President, Dr. A. H. Cordier, of Kansas City, Mo.; first vice-president, Dr. Charles F. McGahan, of Aiken, S. C.; second vice-president, Dr. Charles L. Minor, of Asheville, N. C.; secretary, Dr. Henry E. Tuley, of Louisville, Ky., re-elected; treasurer, Dr. Dudley S. Reynolds, of Louisville, Ky., re-elected.

Put-in-Bay, Ohio, was selected as the next place for holding the meeting; time, September, 10-12, 1901. Dr. J. C. Culbertson, of Cincinnati, Ohio, was selected as the chairman of the committee of arrangements. The meeting ended with a banquet at the Battery Park Hotel, given by the Buncombe County Medical Society.

Cincinnati Academy of Medicine.

Stated Meeting, September 24.

President Dr. Charles L. Bonifield, in the chair.

EPITHELIOMA OF WRIST.

DR. MEYER L. HEIDINGSFELD presented a negress, aged 62, with a large epithelioma on the posterior surface of the right wrist, which had commenced about eight months before as a small wart, and now occupied an almost circular area about two inches in diameter. The growth was very warty in character, but did not extend deeply into the tissues of the wrist. The cubital glands were somewhat enlarged, but those of the axilla were not involved. In connection with this case he wished to present for Dr. Samuel E. Allen a similar case, in which the

tumor had been excised by a so-called "cancer doctor"; on microscopical examination the excised portion was found to be not epitheliomatous but syphilitic.

DOUBLE HYDROSALPINX.

DR. EDWIN S. RICKETTS presented specimens of double hydrosalpinx removed from a woman thirty-three years of age, whose husband was known to have had gonorrhea at the time of his marriage. She had never been pregnant. The unusual feature of the case was that she should have had hydrosalpinx and not pyosalpinx, and that on operation the ovaries and tubes were found absolutely free from adhesions.

PATHOLOGICAL SPECIMENS.

DR. HENRY W. BETTMAN presented some pathological specimens obtained during the previous week at autopsies at the Cincinnati Hospital.

1. *Cor bovinum*, in which the principal organic change was found to be a stenosis of the aortic valve, of so high a grade that only a medium-sized probe could be inserted into the opening. The cause of the stenosis was an enormous amount of granulation tissue completely surrounding and occluding the orifice. There was also incompetency of the aortic valve, as well as relative incompetency of the mitral. The heart was greatly enlarged, particularly on the left side. The cavities were all dilated. Myocardial changes of considerable degree also existed. The spleen enlarged and presented a large red infarct.

2. *Pseudo Female Hermaphroditism.*—The external and internal genital organs were presented. The individual had dressed as a woman, and as she had died from the effects of severe burns, inflicted in an attempt to save a number of helpless children, her womanly instincts were probably well developed. Her general build was rather masculine than feminine, though the breasts were of the feminine type. At the usual location of the clitoris there was a small undeveloped penis without urethra; the vaginal orifice was only about two inches in length and there was a separate orifice for the urethra. The testicles were situated to the right behind the nymphæ. There were no internal female organs of generation.

3. *Stone in the Kidney.*—Removed from a patient who died from alcoholic meningitis. The kidney with its capsule weighed two pounds. On opening the organ, a stone was found involving almost one-third of the entire mass, together with numerous smaller stones. The larger stones were surrounded by pus. The speaker was often in doubt whether the irritation of the stones caused the suppuration, or the pus formation resulted in a precipitation of the phosphatic material. The other kidney was normal beyond a compensatory hypertrophy.

INTESTINAL ANASTOMOSIS.

DR. MAGNUS TATE called attention to Johnson's device as an aid to intestinal anastomosis—a cylinder of potato or other vegetable, which was crushed after the two ends of the intestine had been brought together by a Lembert suture.

DIABETES MELLITUS.

DR. MARK A. BROWN reported a case of diabetes mellitus, showing how, under strict diabetic diet, rest, and a single remedy, much could be done to alleviate the condition. The patient, when admitted to the hospital, complained principally of inability to retain urine and polyuria, which had persisted for more than a year. He was apparently in the best of health, robust, and looked ten to fifteen years younger than 71, his true age. Analysis showed a decided reaction for sugar. He was put on the bromid of gold and arsenic, ten drops three times a day, the dose to be gradually increased. Not only has the total quantity of urine passed in the twenty-four hours diminished, but the percentage of sugar in this decreased in amount, and consequently the total output of sugar has also lessened, showing beyond all doubt that improvement has taken place.

NEPHRITIS.

DR. ALFRED FRIEDLANDER presented a case of nephritis. The patient, a female, aged 28, had had scarlet fever in childhood, and remembered that at that time her face had become greatly swollen. For eighteen years following this she had enjoyed perfect health. Five years ago she became dull, stupid, with loss of appetite, dizziness, marked diminution in the secretion of urine, and finally convulsions. Similar attacks followed at irregular intervals, each attack being followed by apparent recovery with absolutely no abnormal symptoms during the intervals. A year ago she was married. During the pregnancy that soon ensued edema of the face and extremities, without ascites, appeared; albuminuria existed from the third month with casts. Her condition grew steadily worse, until, in the eighth month of pregnancy, it became necessary to induce labor. The patient promptly recovered. Three months later she had an attack of appendicitis, followed by dulness, marked disturbance of vision, intense headache, and almost complete suppression of urine. For four days thereafter, the urinary secretion did not exceed two ounces, but there was no edema of the face or extremities, no ascites, and no albuminuria. A week later, under treatment, the urine had risen to a pint and a half in twenty-four hours; at this time there was albuminuria and casts were found. Improvement was rapid, and at the present time she enjoys excellent health, the urinary conditions being normal.

INCIPIENT POTT'S DISEASE.

DR. ALBERT FREIBERG reported a case of incipient Pott's disease in which there was pronounced lateral, but no anteroposterior curvature. He called attention to the difficulty of early diagnosis in these cases, and said that even when some curvature was present, it was necessary to exclude stone in the kidney. The marked improvement of his patient in a well-fitting plaster jacket he also considered a diagnostic point of some value.

Philadelphia Academy of Surgery.

October 1, 1900.

President Dr. De Forrest Willard in the chair.

DISLOCATION OF THE TOE.

DR. GWILYM G. DAVIS called attention to the frequency with which this injury was overlooked. The physical signs are slight separation of the toes on standing, local pain, projection of sole of the foot, and of the head of the metatarsal bone of the affected toe. The dislocation has such a tendency to recur that opening of the joint and loosening all fibrous attachments and tendons in narcosis is advised. A more sure operation would be to amputate. Resection he would not advise on account of the tendency of the toe to become displaced, and a source of pain and annoyance.

OPERATION IN THE PRE-PERFORATIVE STAGE IN TYPHOID FEVER.

DR. ROBERT G. LECONTE reported the case of a patient aged 23, who had been admitted to the Pennsylvania Hospital on account of symptoms pointing to appendicitis. He was anesthetized, the abdomen opened, and intestines drawn into the wound, when it was found that they were entirely covered in areas with plastic lymph, which was removed carefully. There were small dark spots along the ileum due to necrotic Peyer's patches. The peritoneal cavity was walled off as much as possible by gauze. Ten days later there was a discharge of feces through a fistulous opening, typical symptoms of typhoid fever developed and the blood gave a positive Widal reaction. He was discharged cured on the fiftieth day.

DR. WILLIAM J. TAYLOR believed that the only hope in cases of perforation during the course of typhoid fever was to operate at the earliest possible moment. In cases where there had been only a perforation without peritonitis and in which an operation had been done, recovery followed. The physician delays too long before referring such cases to the surgeon, and it devolves on the physician to make an early diagnosis.

DR. G. G. DAVIS advised isolation of the diseased parts by means of gauze rather than invagination or suturing.

SHOT AS A NUCLEUS OF A VESICAL CALCULUS.

DR. ROBERT G. LECONTE reported a case in which the patient, while hunting, had accidentally discharged his gun, and the

charge penetrated his left side. A few days later fourteen shot were discharged in the urine. Several years after the injury he complained of pain and tenesmus on micturition and other evidences of stone, which was found on examination. Litholapaxy was done, and in the fragments a No. 6 shot was found; it appeared to have acted as the nucleus. He made a good recovery.

DR. WILLIAM G. PORTER reported a case in which a twig had acted as a nucleus of a vesical calculus.

PERFORATION OF THE SMALL INTESTINE.

DR. WILLIAM J. TAYLOR reported a case of a young man who, while hunting, accidentally discharged the gun, the stock of which struck him in the abdomen. A few days later general peritonitis developed. He was first seen by the speaker about the eighth day. Immediate operation was advised, and, on opening the abdomen, the intestines were found completely matted together by plastic lymph. While separating a portion of the bowel, a sudden gush of liquid feces escaped, which it was found had come from a perforation enclosed in the matted portion of the intestine. The perforation was closed with a double row of sutures, but the patient subsequently died.

DR. RICHARD H. HARTE desired to emphasize the importance of early operation in certain cases of contusions of the abdomen. In 4 cases of contusions in this region in which he had operated the intestine was found to be ruptured in 2 and the liver ruptured in the other two.

DR. DEFORREST WILLARD spoke of a case in which a child 3 years of age had fallen on a picket fence which had made a large rent in the stomach and had protruded through the diaphragm and upward toward the heart. The patient was operated on without an anesthetic, and the injury repaired, but death followed several hours later.

DR. WILLIAM G. PORTER asked Dr. Harte what signs or symptoms he considered most important indications for opening the abdomen. Dr. Harte replied that shock, a slow pulse, tympanites and evidences of peritonitis were in his opinion most important.

DR. ROBERT G. LECONTE believed that if operation was to be done, it should be done within the first twenty-four hours, but after that point it should be treated upon the expectant plan.

PRESENTATION OF A SPECIMEN.

DR. MICHAEL O'HARA presented a specimen of intestine removed from a dog on which he had done an end-to-end anastomosis fourteen days previously. The union appeared to be perfect. In using his forceps in these cases he had not met with any hemorrhage from the mucous coat. In suturing, he endeavored to go through this coat. Dr. LeConte and Dr. Girvin both corroborated the statements of Dr. O'Hara that there is usually no hemorrhage.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Medical News (N. Y.), October 9.

1 *Internal Secretion of the Ovary. Arthur W. Johnstone.
2 *Internal Antisepsis. Reynold W. Wilcox.
3 *The Treatment of Consumption at Home. Joseph Eichberg.
4 Iritis. J. H. McCassy.
5 Meralgia Paresthetica. James J. Walsh.

New York Medical Journal, October 6.

6 *Prevalent Errors Regarding the Diagnosis and Treatment of "Eye Strain" from Various Causes. Ambrose L. Ranney.
7 Some Observations upon Syphilitic Manifestations in the Optic Nerve and Retina; Inflammatory Manifestations. (Continued.) Paul T. Vaughan.
8 *The Use of the Suprarenal Capsule in Diseases of the Heart: a Preliminary Report. S. Floersheim.
9 *Combined Electrization or Galvanofaradization. A. D. Rockwell.
10 Implantation of an Artificial Vitreous; "Mules' Operation." Matthias L. Foster.
11 Fibroma of the Larynx. A. B. Thrasher.
12 A Case of Pin in the Larynx for Two Years; Removal by Endolaryngeal Methods. A. W. De Roaldes.

Boston Medical and Surgical Journal, October 4.

13 *Remarks upon Obscure, Non-Traumatic Tumors of the Lower Abdomen Suddenly Appearing where None had Previously been Detected. Maurice H. Richardson.
14 A Case of Inflamed Peritoneal Cyst Simulating Ovarian Cyst with Twisted Pedicle. Agnes C. Vietor.
15 *Serum Therapy in Pneumonia. William H. Smith.
16 Case of Patent Foramen Ovale in Advanced Life. William L. Worcester.

Philadelphia Medical Journal, October 7.

17 Hemorrhagic Pancreatitis and Fat-Necrosis Following an Operation on the Gall-Bladder. Charles G. Stockton and Herbert U. Williams.
18 *Obstruction of the Common Bile-Duct. John B. Deaver.
19 *The Relation Between Gall-Stones and Appendicitis. A. J. Ochsner.
20 *The Etiology of Gall-Stones. Frederick C. Shattuck.
21 Indications for the Drainage in Diseases of the Biliary Passages and the Technic of Operation. J. E. Summers, Jr.
22 A Case of Gall-Stone Obstruction of the Cystic Duct Illustrating the Difference in Pathology, Symptoms and Treatment between this and Gall-Stone Obstruction of the Common Duct. Frederick A. McGrew.
23 *Diagnosis of Medical and Surgical Diseases of the Liver and Biliary Passages. John H. Musser.
24 *On Lesions of the Pancreas Simulating Gall-Stone-Impactions of the Common Duct. Maurice H. Richardson.
25 Two Interesting Cases: Gall-Stone of the Cystic Duct, with Situs Viscerum Inversus; and Gumma of the Liver. Frank Billings.

Medical Record (N. Y.), October 6.

26 *Medullary Narcosis During Labor. S. Marx.
27 *Observations on Subclavian Deligation. Schuyler C. Graves.
28 Tuberculosis and its Treatment. Margaret Stanton.
29 *Appendicitis Larvata, and Inflammation of the Right Broad Ligament, Tube and Ovary. Otto Thienhaus.

Cincinnati Lancet-Clinic, October 6.

30 *Tuberculosis of the Skin. A. Ravogli.
31 *Pathology of Tuberculosis of the Skin. M. L. Heidingsfeld.
32 *Treatment of Tuberculosis of the Skin. A. G. Drury.

St. Louis Medical Review, October 6.

33 *The Cell Doctrine. C. Fisch.

Medical Fortnightly (St. Louis), September 25.

34 Report of the Remote Results of Sanguinary Intervention (Intervention Sanglantes) in Urethrostenosis. Reginald Harrison.
35 Diseases of the Lungs and Pleura. Albert Abrams.

American Practitioner and News (Louisville, Ky.), September 15.

36 Serum Treatment. Ewing Marshall.
37 Exophthalmic Goiter. John J. Moren.
38 The Aspect of Smallpox in the United States, its Source and Character; with Report of Two Cases and a Case of Vaccinia. J. Brent Palmer.
38 "Only a Country Doctor." Harold Emery Jones.

Annals of Surgery (Philadelphia), October.

40 *The Surgical Treatment of Primary Renal Tuberculosis, with a Consideration of the Immediate and Remote Results after Operation. Otto G. Ramsay.
41 A Study of One Thousand Operations for Acute Intestinal Obstruction and Gangrenous Hernia. Charles L. Gibson.
42 *Mesenteric Cysts. Charles B. Dowd.
43 *Dislocation of the Humerus. Complicated by Fracture at or Near the Surgical Neck. Charles B. Lyman.
44 *Remarks on Technique of Prostatectomy, with Report of a Case. Herman Mynter.
45 Suprapubic Retrocystic Extraperitoneal Resection of the Seminal Vesicles, Vasa Deferentia, and Half of the Bladder. Hugh H. Young.
46 Excision of the Right Vas Deferens and Vesicle Seminalis for Secondary Tubercular Disease. James A. Hutchinson.
47 A New Method of Calpoplasty in a Case of Entire Absence of the Vagina. Carl Beck.
48 Tetanus. (Concluded.) Alexis V. Moschcowitz.

Bulletin of Cleveland General Hospital, April

49 The Treatment of Lacerated Wounds. William E. Lower.
50 A Case of Gumma of the Iris. W. E. Shackleton.
51 Address at Commencement Exercises, Cleveland College Physicians and Surgeons, Epworth Memorial Church, May 3, 1899. Albert R. Baker.
52 Foreign Bodies in the Hand. N. Stone Scott.
53 A Case of Puerperal Hematoma. R. E. Skeel.
54 Some of the Newer Remedies: Orexine Tannate, Stypticin, Nosophen, Xeroform. J. B. McGee.
55 A Preliminary Report on the Direct Treatment of Chronic Diarrhea—Catarrhal Proctocolitis. Thomas Charles Martin.

American Gynecological and Obstetrical Journal (N. Y.), September.

56 *Reflex Neurosis from Disturbed Pelvic Mechanism. Byron Robinson.
57 *The Causes, Diagnosis, and Non-Surgical Treatment of Pelvic Inflammation. Edward J. Ill.
58 Some Local Nutritive Influences in the Pelvic Disorders of Women. O. B. Will.
59 Ventral Hernia: Report of a Case. Marie Rennotte.
60 *Uretero-Intestinal Anastomosis and its Place in Pelvic Surgery. Reuben Peterson.

Western Medical Review (Lincoln, Neb.), September 15.

61 Acute Osteomyelitis—(Syn.) Acute Infective Panosteitis. Charles C. Allison.
62 Aortic Aneurysm, with Report of Cases and Exhibition of Specimens. J. N. Hall.
63 *Reflex Neurosis from Disturbed Pelvic Mechanism. Byron Robinson.
64 How Shall we Manage our Cases of Membranous Croup? Wilbur N. Hunt.

Obstetrics (N. Y.), September.

65 *Hemorrhage Occurring after the Menopause. E. C. Davis.

Maryland Medical Journal, October.

66 Pylorectomy for Adenocarcinoma, with Report of a Case. Jos. H. Branham.
67 Report of a Case of Encysted Periurethral Gravel. William E. Hunger.
68 Report of Twelve Cases of Mastoiditis, with Operations. George S. McReynolds.

Annals of Gynecology and Pediatrics (Boston), September.

69 *The Prophylactic Douche. O. S. Chapman.
70 Pelvic Suppuration. Florus F. Lawrence.

Clinical Review (Chicago), October.

71 Prolapsus Uteri. Henry F. Lewis.
72 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.
73 Uronephrosis. M. L. Harris.
74 Disturbance of the Stomach in Relation to Diseases of the Chest. Joseph M. Patton.
75 Gastrostomy for the Cure of Stricture of the Esophagus. Hal C. Wyman.

Chicago Clinic, September.

76 *Subarachnoidean Injections of Cocain as a Substitute for General Anesthesia in all Operations below the Diaphragm—with Report of Nine Cases. John B. Murphy.
77 The Treatment of Sciatica. A. Heym.
78 Pott's Fracture. J. N. Bartholomew.
79 Pharmacology and Modern Therapeutics. J. A. Patton.
80 An Anatomical Lecture. W. T. Eckley.
81 Intubation and Tracheotomy. (Continued.) Aime P. Heineck.

Canadian Journal of Medicine and Surgery (Toronto), October.

82 *Tuberculous Lesions from a Clinical Point of View. Edmund Owen.
83 *The President's Address. R. W. Powell.
84 *Address in Gynecology. William Gardner.

Yale Medical Journal (New Haven, Conn.), October.

85 *Diabetic Coma. John S. Ely.
86 Mineral Springs; Their Practical Use in Medicine. William S. Barnes.
87 *A Study of One Hundred and Forty Cases of Measles, with Reference to the Appearance and Value of Koplik's Spots as a Diagnostic Sign. William J. Maroney.

Louisville Monthly Medical Journal, October.

88 Some Hints on the Diagnosis and Treatment of Chronic Gastritis. Orville A. Kennedy.
89 A Report of Surgery. (Continued.) H. Horace Grant.

St Louis Medical and Surgical Journal, October.

90 *Caroid in the Removal of Tattoo Marks. A. H. Ohmann-Dumesnil.
91 The Japanese Disease "Mitari-Kasa-Yamai" (of 806-809 A. D.)—Was it Syphilis or Leprosy? Albert S. Ashmead.
92 The Non-Tabetic Lesions of the Posterior Column. M. Bruce.
93 The Differential Diagnosis of Organic and Hysterical Hemiplegia. David Ferrier.
94 The Pathologic Anatomy of Idiocy. G. E. Shuttleworth and F. Beach.
95 Case of Ulcerative Otitis. T. J. Biggs.
96 Nature of Tendon-Reflexes. C. S. Sherrington.

Buffalo Medical Journal, October.

97 *The Relation of the Specific Gravity of the Blood to its Percentage of Hemoglobin. F. C. Busch, A. T. Kerr, and F. Filsinger.
98 A Case of Multiple Fracture of the Inferior Maxilla Complicated by Dislocation. William Seaman Bainbridge.
99 The Physician. William Stanton.
100 Antitoxin in Cerebrospinal Meningitis. Francis M. O'Gorman.

Dominion Medical Monthly (Toronto), September.

101 *President's Address at the Canadian Medical Association. R. W. Powell.
102 Sewage Purification by Bacteria. Willis Chipman.

St. Paul Medical Journal, October.

103 Gonococcal Infection: Its Effects, Immediate and Remote. William E. Ground.
104 *Rabies in Minnesota. F. F. Wesbrook.
105 *The Significance of Blood Count in Surgical Diagnosis. Andrew J. Coey.
106 *A Problem in Ethics. Charles L. Greene.
107 *The Superiority of the Suprapubic over the Vaginal Section. A. E. Benjamin.
108 Neurasthenia. H. B. Allen.
109 Pathology of Chronic Gastritis. Franklin T. Poehler.

Canada Lancet (Toronto), September.

110 The Prognosis of Drug Habits, with Some Reference to Treatment. Stephen Lett.
111 Occlusion of the Bowels Following Appendicectomy: Enterectomy Eighteen Hours after Delivery. Obstruction from Tubercular Peritonitis. Ernest Hall.
112 The Pathology of Crime and its Therapeutics. Louis J. Rosenberg.

New Orleans Medical and Surgical Journal, October.

113 *Tuberculosis. J. A. Storck.
114 *Prophylaxis of Surgical Shock. W. M. Perkins.
115 *A Case Illustrative of the Absence of the Ordinary Acute Tympanic Signs in Acute Suppurative Mastoiditis following Abscess of the Middle Ear—Operation—Death. C. J. Landfried.
116 Typhoid Fever—Treatment. F. P. Henry.
117 Mitral Stenosis and Chlorosis. F. P. Henry.

Southern Practitioner (Nashville, Tenn.) October.

118 Face Presentations. Richard Douglas.
119 Asthma and Its Treatment. A. E. May.
120 Recovery of a Case of Tetanus under Serum Treatment. J. Moore Soniat.
121 Large Tract of Chronic Burn Ulceration Healed by Skin Propagation in Blood, from Minute Points of Dermal Tissue. T. J. Biggs.

American Therapist (N. Y.), September.

122 *Epigea for Eructation. Charles D. Aaron.
123 General Anesthesia by Cocain. A. L. Benedict.
124 Orthoform Facts. F. B. Sprague.

AMERICAN.

1. **Internal Secretion of the Ovaries.**—Johnstone combats the rather prevalent idea of there being an internal secretion of importance to the economy from the ovaries and holds that there is no proof that the organism has any other function than the reproductive one. He attributes the troubles of the menopause and menstruation largely to defects of oxidization and excretion and not to any defect of secretion in the ovary. While he believes in reasonable conservative surgery he condemns those dangerous experiments which result in the leaving of a scrap of one ovary, tubes, etc., and the transplantation of the same.

2. **Internal Antisepsis.**—The questions raised by Wilcox are: 1. Is internal antisepsis possible? To which he answers in the affirmative, supporting it by the results of treatment in enteric fever, the examination of the sputum in tuberculosis and the examination of the urine. 2. Can it be detrimental? To this he also says, yes. Instances of fatal poisoning have occurred. 3. Under what conditions may it be employed? In response to this he insists on the importance of knowing all the conditions and avoiding useless attempts when the fact of structural degeneracy have been established. 4. How is it best obtained? Under this head he reviews the antiseptics employed, such as chlorin, silver, bismuth and hexamethylentetramin which have their special actions. Internal antisepsis he says is possible, may be useless or detrimental under certain conditions or may be absolutely contraindicated because of the patient. How best to attain internal antisepsis is a question to which the answer will vary with each successive year as our knowledge of infectious diseases and the best means of combating them is enlarged.

3. **Home Treatment of Phthisis.**—The importance of pure air and nutritive food are the chief points made by Eichberg, though he mentions others, such as moral treatment and drugs. He especially commends the practice of sleeping in the open air as much as possible as advised by Dr. Millett, of Brockton, Mass., in his recent article.

6. **Eye Strain.**—Ranney insists on the importance of proper attention to errors of refraction, the proper fitting, and the centering of glasses, attention to muscular tests, etc.

8. **Suprarenal Capsule in Heart Disease.**—From an experience of eight months Floersheim has found that suprarenal capsule produces a rapid effect on the heart, often toning it up remarkably and especially benefiting it in cases of dilatation, diminishing the area of the heart dulness and localizing the apex beat. It modifies the murmurs, making them more readily diagnosable and rendering the pulsation more rhythmic. Four cases are reported in which the drug was given. He has employed it in 5 gr. capsules, to be chewed by the patient.

9. **Combined Electrization.**—Rockwell finds the combined method of using the galvanic and the faradaic current together as especially beneficial in many disorders. Its musculo-sedative effect is more marked than that of other electric methods, and, therefore, it is valuable in local spasms. He has also found it beneficial as a stimulant over other methods of electric application in diaphragmatic paralysis and to more rapidly ameliorate the symptoms of Graves' disease.

13. **Obscure Abdominal Tumors.**—The class of tumors here described by Richardson are those of sudden appearance and often mistaken for entirely different conditions from those which they really represent. One of the commonest ones is due to a full bladder, and catheterization is therefore advisable for the diagnosis in a very large proportion of these cases. This should constantly appear in the mind of the surgeon and it should be the invariable rule in pelvic surgery to catheterize just before operation, especially in women. The second variety of rapidly-forming tumors may be idiopathic dilatation of the colon or so-called phantom tumor. It is less properly a suddenly appearing than a suddenly disappearing type. There is the condition in which the colon may be twisted and obstructed and show a well-marked tumor. Cases are here reported as illustrating this possibility, which of course, is a serious one. Another condition is peritonitis. Still other causes are dilated stomach, which can not always be correctly diagnosed, and the ovarian tumor with twisted pedicle is a possibility; the different points between it and hematocele are here discussed. Ectopic pregnancy, of course, is to be considered. Still other remotely possible sources are distended gall-bladder and intermittent hydronephrosis. It would appear from the whole of these facts that a positive diagnosis is not always possible. In most of these cases pain is the most important symptom and this alone demands careful examination of the pelvic viscera. The mistake of opening a full bladder is inexcusable. The diagnosis of distended stomach may be impossible. A large bulging tumor of the dilated colon gives signs which Richardson thinks will suggest the true lesion; if it subsides under anesthesia, has a typical resistence, tenderness; if it is rounded and symmetrical; if the obstruction is acute and there has been no gradual cachexia, the dilated colon is strongly indicated. The suddenness of appearance rules out the dilated coils of a chronic obstruction, such as, for example, that due to cancerous stricture. The diagnosis of extrauterine pregnancy is usually easy and of the ovarian tumor with twisted pedicle is easy when such tumor is known to exist, where one has not been previously found it is very difficult. In spite of the difficulty of diagnosis the signs point toward surgical intervention. It is of very little matter whether the case is one of ectopic pregnancy, or twisted pedicle, or extrauterine hemorrhage, or intestinal obstruction; in all the operation may be of use. It is, however, of some importance if expecting a serious lesion, he finds a full bladder or normal pregnancy. In all suddenly appearing tumors, however obscure they may be, intervention is demanded if the symptoms are the least urgent.

15. **Serum Therapy in Pneumonia.**—The possibility of serum therapy in pneumonia is here noted by Smith, who reviews the facts and sums up that "as the question stands today it may be stated that, experimentally, animals may be rendered immune, that their serum has protective property, and that continued investigation is doing away with some of the difficulties which previously harassed the early investigators. But the fact still remains that in dealing with the pneumococcus we are dealing with an organism capable of many variations and degrees of virulence, and that the sera obtained under such conditions must of necessity vary both in strength and character. Washbourne's method of cultivation seems to be a distinct advance, inasmuch as he maintains life and virulence in the culture over a longer period than have other observers. His investigations are recent, and it is too early to state what the result will be. Experimentally, antipneumococcus serum seems to be of value. Practically, that it is of any great value does not at present seem to have been demonstrated, as the reported number of cases are too few; the series of any one observer too small. What the future of the serum therapy in pneumonia will be it is too early to say."

18. **Obstruction of the Common Bile-Ducts.**—Deaver describes the symptoms and conditions of obstruction of the common bile-ducts. His methods of surgical treatment and technique of operation are also briefly mentioned.

19. **Gall-Stones and Appendicitis.**—Ochsner analyzes his cases in which appendicitis and gall-stones were present. During four months beginning February 1, 1900, he operated on eighteen patients suffering from gall-stones, of these six, or one-third of the number, suffered from appendicitis at the same time. He notices the principal relations between these two conditions and emphasizes the importance of examining the appendix when operating for gall-stones. The larger part of his paper is given up to reports of cases.

20. **Etiology of Gall-Stones.**—Shattuck sums up the conclusions that seem to him justified in regard to the origin of gall-stones as follows: 1. A sterile foreign body does not lead to gall-stone formation, though a sterilized gall-stone may be penetrated by, at least, the colon bacillus. 2. The contents of the hepatic and cystic ducts, and also of the gall-bladder, are usually sterile. 3. The common duct not infrequently contains bacteria, a fact readily explicable by the relation of the duct to the intestines. 4. Gall-stones have been produced experimentally by a number of observers, with a number of organisms. Mignot failed with virulent cultures, while he succeeded with attenuated cultures, alone, or in connection with a foreign body. 5. The presence of bacteria has been demonstrated in connection with a considerable proportion of cases of gall-stones. 6. The clumping of the typhoid bacillus led Dr. M. W. Richardson to think this peculiarity might play an important rôle, and he produced gall-stones in a rabbit by the introduction of a small amount of a clumped bouillon-culture into the gall-bladder. 7. The colon bacillus and the typhoid bacillus are the most common bacterial agents in gall-stone formation. He infers from this that stasis of the bile is a very important factor in their production.

23. **Diagnosis of Medical and Surgical Diseases of the Liver and Biliary Passages.**—In this article Musser reviews the condition and symptoms and points out some of the differentiating factors, the specially puzzling conditions of stenosis and obstruction of the gall-ducts and the various symptoms of cholelithiasis. He calls attention to the facts that gall-stones may occur at an earlier age than usually believed, and that pain may be the only symptom and it may be variously located. While jaundice may never be present, in other cases, rigor and fever may be marked and pain insignificant. Persistent localized tenderness of the gall-bladder region often elicited only on deep palpation when the patient takes a full breath is of great importance. The diagnosis of disorders of biliary passages from subdiaphragmatic abscess, appendicitis, intestinal obstruction and acute pancreatitis are particularly noticed.

24. **Lesions of the Pancreas Simulating Gall-Stones.**—Richardson's article is a lengthy one, with the report of a number of cases. He points out the conditions of the pancreas which may lead to a mistake in the diagnosis of gall-stones, and also the possibility of making a serious diagnosis of malignant pancreatitis when such does not exist. The methods of operation for diagnosis of these cases are described, but it is not practicable to reproduce them here.

26. **Medullary Narcosis in Labor.**—Marx reports in detail twenty-three cases in which he has employed the subarachnoid method of producing anesthesia in labor. He gives the usual directions as to technique and mentions the possible dangers of collapse and sepsis. He has never noticed any untoward symptoms. His average dose is about one-quarter of a grain, the smallest, one-sixth. The symptoms which follow the injections he thinks are not due to cocain, as they follow saline solution injections. Asepsis, of course, is absolutely essential and he insists on quiet during the operation, as apprehension is always present, and psychic pain, if not

physical, may be produced. The patient is constantly being reassured by the surgeon and others are requested to refrain from talking.

27. **Subclavian Deligation.**—Graves' method is to substitute the cord of the brachial plexus of the nerves for the deep-lying scalenus anticus muscle as a guide in ligation of the subclavian artery. He thinks by using this the brachial cord is exposed more easily, and by passing the finger behind it less time will be consumed and fewer important structures endangered.

29. **Appendicitis Larvata.**—This term, introduced by Ewald, indicates appendicitis of a chronic, insidious character, which does not necessarily develop into a really acute attack. The patients complain of intermittent pain, disappearing after a long or shorter period, and are often first treated for intestinal colic, gastritis, etc., and with careful examination pain may be elicited by palpation, sometimes at McBurney's point, sometimes in the neighborhood of the navel, or often in other regions, and occasionally there is slight elevation of temperature. The danger is that it may be followed at any time by an acute attack threatening life. Thienhaus reports three cases which illustrate the possibility of diagnosing this condition. Concerning treatment, he says it must be recognized that only operative measures must be taken into consideration. They are indicated because there is no other means of correcting the existing pathological conditions, and the patient is in constant danger of an attack of appendicitis followed by peritonitis. Barnsby says that when the tip of the appendix is adherent to some abdominal organ with or without vascularization of its peritoneal serosa, there is absolute indication for operations. Furthermore, in young female patients one has to deal with the possibility of a subsequent pregnancy, and, as we all know that appendicitis in combination with pregnancy gives the most serious prognosis both for the fetus (abortion is practically inevitable), and for the mother, it is the physician's duty to explain to the patient the above-mentioned complication and to resort to radical treatment, that is, operation.

30. **Tuberculosis of the Skin.**—Ravogli reviews the different forms of tubercular manifestations of the skin, classifying them as those due directly to the tubercle bacillus, of which lupus and its varieties are a type, and those due to toxins, which he calls non-bacillary eruptions, and certain other eruptions, which have been called by Johnson paratuberculoses. He is inclined to include in this latter class scrofuloderma, lupus erythematosus, and certain kinds of eczema described by Unna and Bazin.

31. **Pathology of Skin Tuberculosis.**—Heidingsfeld reviews the pathologic conditions found in lupus—circumscriptus, diffusus, erythematosus, verrucosus, crustosus, phagedenicus and resolutivus.

32. **Treatment of Skin Tuberculosis.**—Internal medication is of little avail in tuberculosis of the skin, and the external treatment is, therefore, the only rational one. The use of caustics is less general than formerly; solid silver nitrate is most in favor. Others which have been recommended are salicylic acid plasters, arsenical paste, chlorid of zinc, pyrogallic acid, etc. The galvano-cautery in the form of punctures is sometimes satisfactory in small nodules, in the cicatrix and in mucous membranes. Excision is effective if the disease is small and circumscribed, though sometimes it may return even then. Thorough scraping of tuberculous areas with a sharp spoon or curette has had exceptionally good results. It is not, however, available where the nodules are deeply imbedded. Caustic potash may be applied later and the dental burr is sometimes used in destroying discrete tubercles. The other method mentioned is linear scarification, consisting of parallel incisions in the diseased parts, going down until resistance is met. Cross-incision is also made and the process is repeated from time to time until new growths are destroyed and cicatrization takes place. The objections to this treatment are its necessarily long duration and the difficulty of getting patients to submit to it.

33. **The Cell Doctrine.**—Fisch combats the idea of the importance of the cell to a certain extent, claiming that the cells do not form the organism, but that the organism forms the cell. He brings to support his view the facts of certain unicellular organisms of high development in the marine growths, the bridges between the cells which are found in the vegetable kingdoms and to some extent in animals. He maintains that the present cell doctrine we are advocating is encouraging a sort of dogmatism that should be deprecated.

40. **Renal Tuberculosis.**—From a careful study of cases personally observed, and others that have been collected in literature, of nephrotomy and nephrectomy for tubercular renal disease, Ramsay deduces the following conclusions: 1. That renal tuberculosis may be classed as a semi-malignant form of inflammation, and that for this reason surgical treatment of some sort is always indicated. 2. That this surgical treatment will have a palliative or a curative end in view depending on the condition of the patient and the duration and extent of the disease. 3. That nephrotomy in renal tuberculosis is to be classed as a palliative operation, and that as a palliative operation for the immediate relief of dangerous symptoms, and as not precluding a later nephrectomy, nephrotomy with drainage of the abscess cavity is most valuable. 4. That resection of the diseased part of the kidney is contraindicated in renal tuberculosis because of the danger of leaving a tubercular focus in the portion left in the body. 5. That nephrectomy or nephro-ureterectomy is indicated in every suitable case, and in suitable cases should be followed by a lasting cure in 55.5 per cent. of the cases. 6. That the indications against nephrectomy are tubercular or other disease of the second kidney, or tubercular foci in other organs. 7. That tuberculosis of the bladder is not to be considered a contraindication to nephrectomy, as it will probably heal later. 8. That a small tubercular focus in the lung, if the patient otherwise is in good condition, may sometimes not be considered a contraindication. 9. That in doubtful cases, when it is questionable whether the patient can stand an immediate nephrectomy, it is better to do a nephrotomy, following it later by nephrectomy. 10. That the clamp method of controlling the pedicle is contraindicated from the danger of hemorrhage after removing the clamp. 11. That it is the safest to remove the ureter with the kidney, as a persistent fistula may give trouble if it be allowed to remain in the body. 12. That a certain proportion of these fistulæ will finally disappear, either after the removal of a deep suture or because of the slow disappearance of the tubercular disease in the ureter, which in these cases gradually changes into a fibroid cord. 13. That we may expect a steadily increasing number of final cures as our means of diagnosis improve and as our surgical technique is carried out more carefully and scientifically.

42. **Mesenteric Cysts.**—Dowd reports a case of multolocular cystadenoma in transverse mesocolon containing pseudomucin, and discusses the whole subject of mesenteric cysts. His summary is given as follows: 1. The occurrence in the transverse mesocolon of a multilocular cystadenoma which contained pseudomucin, and which was exactly like a cystadenoma of the ovary, suggests its probable origin as an embryonic ovarian sequestration. 2. The occurrence of dermoid cysts in a similar position suggests a similar origin. 3. The occurrence of chylous cysts in the mesentery, which have the structure and appearance of ovarian and parovarian cysts, and which have in their walls lymph-vessels, suggest embryonic cysts into which there has been an effusion of chyle. 4. The sanguineous cysts appear to be preformed cysts into which hemorrhage has taken place; hematomata in the mesentery should not be described as cysts. 5. The presence of cysts which have the structure of the intestinal wall suggest sequestration from the intestine. 6. Serous cysts are apparently similar in origin and structure to the cysts already considered. They are usually not situated in the path of the lacteal vessels. 7. Hydatid cysts form a class by themselves and are due to the tenia echinococcus. 8. Reports indicate that mesenteric cysts are being removed at least as often as once a month. 9. It is probable that all mesenteric cysts may be included in the

classifications: 1, embryonic cysts; 2, hydatid cysts; 3, cystic malignant disease.

43.—See abstract in THE JOURNAL of August 8, p. 449.

44. **Prostatectomy.**—Mynter reports a case of prostatectomy in which he was able to do the whole operation through the perineum by extending the posterior end of the longitudinal incision from the bulbus urethræ to the anus, in a curve around the anterior half of the anus on both sides, when he dissected loose the curved flap containing the anterior wall of the rectum and exposed the prostate to sight. With a grooved stone-sound he made a median incision in the prostate posteriorly without opening the urethra, introduced the finger, entered capsule and enucleated with ease both hypertrophied lateral and middle lobes, meanwhile pushing the prostate down in the perineum with the hand above the symphysis pubis. Unfortunately, the posterior urethra was torn at one place by the finger against the sound and therefore he drained the bladder for seven days. He thinks, however, this accident can be avoided in other cases and that the operation thus performed will be an ideal one.

57. **Pelvic Inflammation.**—After first describing the condition, its symptoms and diagnosis, Ill passes to the treatment, which he thinks has been heretofore too exclusively surgical. In acute cases the cause should be considered, though it does not materially change the treatment, excepting in tuberculous cases. The patient should be kept in bed, bowels moved by salines every second day, diet be unexciting, pain controlled by ice-bags for a short time, hot vaginal douches with permanganate of potash solution (1 to 20000), small blisters over the seat of pain, and in some cases tamponing the vagina with iodoform gauze and applying cantharidal collodion on cotton to cervix if there is great sensitiveness to touch and swelling; the latter produces a very copious purulent discharge and should be removed in four hours and followed by douching several times a day. Then comes the use of a 10 per cent. solution of ichthyol in glycerin, applied in the evening and followed by a large vaginal douche before removing the tampon in the morning. The blisters may be resumed in five to eight days. For rectal tenesmus and discharges of mucus an opium suppository may be given; an opiate is in any case best administered by the rectum. Relapses are common from sexual excitement, cold, menstruation, etc. All these causes can be controlled excepting the menstrual period, and the author has been making a trial of the treatment suggested by Grammatikati for the control of this function and will report the results in the future. The treatment of the chronic form consists in an endeavor to produce absorption of exudate and adhesions and replacing of the displaced organs. He would paint the vaginal roof with tincture of iodin and apply a glycerin-ichythol tampon, and if the patient is found to tolerate it, add to the tampons until the vagina is firmly packed. They should be retained for forty-eight hours and withdrawn by a string. Two days following the removal the patient should be directed to take a large hot vaginal douche night and morning, preferably in the knee-elbow posture. In these cases he has also found much good from the Brandt method of massage. Pelvic cellulitis is also described and the treatment mentioned. It consists in the use of large hot permanganate of potash or lysol douches or weak mercuric bichlorid. The use of the ice-bag over the affected side, and in less acute cases, after the abrasion or fissure of the cervix is looked for, carefully cleansed and kept clean; thorough swabbing with hydrogen dioxid, followed by an injection of a 5 to 10 per cent. mixture of iodin in glycerin is usually sufficient. In tubercular inflammation, of course, the case is a surgical one from the beginning.

60. **Ureterointestinal Anastomosis.**—Peterson sees no special value in intestinal implantation of the severed ureters. In very few instances do the experimental animals overcome the infection and survive. Maydl's operation, which he prefers to call uretero-trigono-intestinal anastomosis, is favorably spoken of, and he thinks this method as modified by himself has been a perfectly justifiable surgical procedure in vesical extrophy. Uretero-intestinal anastomosis by the formation of permanent fistulæ connecting the bladder and rectum is also spoken of as somewhat promising, though he doubts whether it can ever be successfully made in cases of purulent cystitis due to enlarged prostate.

56.—See abstract in THE JOURNAL of September 13, ¶120, p. 976.

63.—Ibid.

65. **Hemorrhage After the Menopause.**—The causes of hemorrhage after the menopause are given by Davis as follows: 1. Granular endometritis, which can usually be relieved by aseptic curetting. 2. Atheroma of uterine blood-vessels, which offers but little prospect of relief, though changes in the diet consisting of an abundance of well-cooked meats and fruit might prove of benefit with tonics and alteratives. 3. Vasomotor relaxation is a possible source of hemorrhage, improvement of general health by the use of tonics, with special attention to the nervous system will cure this disturbance. 4. Uterine polypus should be readily recognized and promptly removed. 5. Uterine myofibroma covers too extensive a subject to be fully treated here. 6. The last cause, malignant disease, is the most important. He thinks that it rarely attacks the nulliparous uterus and generally involves some sore or old laceration, especially of the cervix. Such injuries, therefore, should be attended to promptly. He does not credit the employment of methods to prevent conception with having much to do with the existence of cancer. The earlier the operation is done, the better the chance; it is important to investigate early all cases of hemorrhage after the menopause, especially if there is any suspicion of malignant disease.

69. **The Prophylactic Douche.**—After noticing the change of views of recent years in regard to the use of this method and discussing the literature, Chapman says that he has been in the habit of using the preliminary prophylactic douche, but has been led by his studies to question the advisability of so doing unless there is some suspicion of gonococci. He is almost persuaded that the bacteria will meet with more timely neutralization without the primary douche than with it. After the completion of labor in the ordinary case, the douche is used until the third day, unless there is some indication for the same on account of offensive discharges. His success with the method has been very satisfactory.

76. **Cocain as a General Anesthetic.**—Murphy reviews the history of anesthesia by subarachnoid injections of cocain, giving credit to Corning for its origination, gives full directions as to the technique, and reports nine cases in which he has successfully employed the method. He has seen no serious accidents follow the anesthesia thus produced, though vomiting and headache may appear during the operation or some hours later and last some little time. He has also noticed some perspiration and pupillary dilatation, with temperature and rapid pulse, but they all disappeared within twenty-four hours. The important points are the thorough asepsis, use of aseptic material and the assurance that the needle has entered the spinal canal by seeing the cerebrospinal fluid flow clear before introducing the cocain.

82.—See abstract, vol. xxxv, p. 764.

83.—Ibid., p. 763.

84. Ibid., p. 764.

85. **Diabetic Coma.**—Ely argues in favor of the rather widely accepted theory that diabetic coma is an expression of an acid intoxication due to the presence in the body of B-oxybutyric acid in large quantities, and while he admits that the result of alkaline treatment has not been very satisfactory in the past, he reports several cases coming under his observation in which they have been very favorable. He is impressed by the difficulty which attends the administration of alkali, especially the risk of favoring intestinal putrefaction, and insists on the importance of careful scrutiny of the condition of the bowels and digestion in these cases. He would warn against the too-rapid withdrawal of carbohydrates in patients suffering from diabetes, as this may favor the development of coma from the readiness of proteid food to yield acid in its decomposition.

The alkali treatment should be instituted prior to the reduction of carbohydrates and they should be carefully withdrawn.

87. **Koplik's Spots.**—From a study of 140 cases of measles, Maroney thinks they prove conclusively that the presence of Koplik's spots is an absolute pathognomonic sign of measles, from which a positive diagnosis can be made at an early stage of the disease. They appear in the great majority of cases before the appearance of any skin eruption and in almost one-half the cases before any coryza or conjunctivitis, and their recognition affords an early means of isolation and offers a means of limiting if not aborting epidemics in hospitals and institutions.

90. **Tattoo Marks.**—Ohmann-Dumesnil describes his method of removing tattoo marks, which is an application of a bland solution of the vegetable ferment caroid especially prepared for use as a physiologic solvent, which is poured over and rubbed into the tattooed surfaces and then the spot is covered with two or three layers of gauze soaked in the solvent. In a few days, when the latter are removed, the tattoo marks appear light and hazy. Very shortly afterward some crusts appear and when they fall off all trace of the tatoo is gone.

97. **The Specific Gravity of the Blood.**—Busch, Kerr and Filsinger, the authors, give the results of their experiments to test the specific gravity of the blood and tabulate some eighty-eight cases in regard to the value of the blood-count, hemoglobin, etc., in connection with the specific gravity. They summarize their conclusions as follows: 1. In most cases the specific gravity and the percentage of hemoglobin of the blood present such a close relationship to one another that the latter may be predicated from the former with sufficient accuracy for clinical purposes. 2. Both v. Fleischl's and Gower's instruments are liable to an error of 10 per cent. or more. 3. There is liable to be very slight, if any, error in the determination of the specific gravity by Hammerschlag's method.

101.—See abstract, p. 763.

104.—See abstract in The Journal of July 14, p. 117.

105.—Ibid.

106.—Ibid.

107. **Suprapubic vs. Vaginal Section.**—Benjamin insists on the greater advantage of performing abdominal section over the infrapubic operation and quotes a number of authorities in support of his view. The chief advantage is the ability to make a more thorough operation, to discover complicating conditions and to meet the complications. He offers in conclusion the following as his suggestions in regard to the matter: 1. The abdominal operator has the advantage of sight, touch and access to the disease. 2. He is able to explore the whole abdomen for visceral disease. 3. He can do careful, complete and conservative work. 4. There are few diseases of the female pelvis, except certain abscesses, operable from below that are not best treated from above. 5. Surgery of the female pelvis should be the practising of good surgical sense and not fads.

113. **Tuberculosis.**—The usual facts in regard to precautions and prophylaxis are reviewed and the author gives his own treatment somewhat detailed. He thinks the ordinary cases, with no throat complications, are benefited by altitude, but every case should be studied by itself in this regard. Advanced cases should never be sent away from home. Cases with catarrhal complications do best with a climate of a lower elevation. He has had no experience with the pneumatic cabinet, but takes the opinion of others that it is a valuable adjunct. The cool morning bath is often of advantage, and he would shut off the use of tobacco from tuberculous subjects. The diet should be nutritious and digestible. The teeth should be carefully looked after. For tonics he suggests cod-liver oil, arsenic and iron, which last he prefers in the form of ferratin; the creosote derivatives in combination with strychnin sulphate are the drugs with which he has had the best results. He prescribes the following formula:

℞ Strychnin sulph.....gr. ss.
Guaiacol carbonate.....3ii

M. Ft. caps. No. xxiv. Sig. One twenty minutes after meals.

He also uses the inhalation of a 40 per cent. aqueous solution of formic aldehyde, using 20 to 40 drops on a piece of cloth twice daily. For night-sweats he finds camphoric acid of advantage when atropin and other drugs failed. For cough he gives codein sulphate in combination with chloroform and wild cherry. For vomiting, cocain and menthol. For intercostal neuralgia, hot-water compresses, counter-irritants, etc. For hemoptysis hydrastis canadensis, morphin, ice, etc. For fever, lactophenin, phenacetin and acetanilid. Nux vomica, cinchona, etc., are often useful. In advanced cases there is little to be done. He believes the disease is curable under certain conditions. If we can encourage the patient to hope for recovery we have done much.

114. **Prophylaxis of Shock.**—Shock consists of central nerve depression due to too severe or too long continued stimulation showing itself in the symptoms referable to three causes: 1. Vasomotor paralysis. 2. Respiratory paralysis. 3. Cardiac paralysis. The distinction between collapse and shock insisted on by Crile is noticed. To prevent shock in severe surgical operations, the first thing is to give the patient rest and the patient should be insured ample sleep for a few days preceding, and the preliminary purgation be completed twenty-four hours prior to the operation. Cardiac stimulation can be used to advantage in patients suffering from functional or organic disease of the heart. All respiratory troubles should be relieved as much as possible and lowered vascular tone be improved by constitutional remedies. Morphin injected is a help in many cases and may be used in ¼ gr. doses twenty minutes before giving the anesthetic in combination with atropin and strychnin. Threatened respiratory failure can often be avoided by stopping the anesthetic and inverting the patient. Ammonia is an efficient stimulant and acts immediately. Inhalations of amyl nitrite are of value when sudden collapse threatens, though contraindicated in profound shock. Saline infusion is the most satisfactory method of avoiding shock and is an efficient prophylactic. Speed is of importance in operation.

115. **Acute Tympanic Abscess.**—Landfried reports a case with the absence of the ordinary acute tympanic signs of suppurative mastoiditis following abscess of the middle ear from which he deduces that we had better depend on the presence of the continuous flow of pus through the perforated drum in determining the possibility of mastoid complications rather than on the intensity of the acute objective signs ordinarily seen with such complications. He also points out the danger of delay in operating on mastoid cases occurring late in the history of otitis media where suppuration has been continuous, and the need of proper equipment of the doctor who has to treat such cases. His own conclusion was to err, if to err is necessary, always on the side of incising the drum. A large incision made early is one of the most conservative things he knows of in surgical practice. It is not safe to chisel only into the mastoid antrum. The complete carving of the mastoid processes, even if the sinus should be exposed, had better be done. The case also illustrates the value of the aseptic aspirating needle in determining whether or not it is imperative to open and flush the lateral sinus or to ligate the jugular vein. Where there is no thrombosis the blood will flow through the needle passed into the sinus. Prognosis in any case of running ear is uncertain as regards complications until the discharge has completely ceased.

122. **Epigea.**—Aaron suggests epigea as a remedy for gastric eructations. Although the plant has not been recognized officially, it has received some attention. Three glucosids have been isolated, namely, arbutin, ericolin and urson, besides other substances. He has had some very happy results from its use, but is not able to say to which one of these principles the therapeutic value is due. The plant is well known, being the common trailing arbutus.

FOREIGN.

The Lancet, September 22 and 29.

The Etiology of Rheumatic Fever. Frederick J. Poynton and Alexander Paine.—The authors first review the his-

tory of the microbic theory of rheumatic fever, showing how complicated and uncertain the present state of the bacterial theory of rheumatic fever still remains. They recognize five different views as held: 1. Allowing that the disease is microbic it is held that there is no specific micro-organism, but that it is a form of septicemia due to staphylococcic and streptococcic infection. This they do not find supported sufficiently to be probable, considering the absence of suppuration. The second view is that rheumatism is due to a specific diplococcus; the third, that its cause is a specific bacillus. The fourth raises the question of mixed infection of bacilli and cocci as in diphtheria, but the authors consider this is unsatisfactory. The last view holds that rheumatic fever is not a disease *sui generis*, but a particular reaction of tissues to other infections. To summarize their own view they think it more probable that the micro-organism is always present in rheumatic fever, that it is capable of isolation, and that it may produce similar symptoms in suitable animals, and that it will probably exhibit some definite peculiarities on culture. They also think that it would be a simple and not a mixed infection. Their investigations are given in detail and the diplococci which they found, described, with the experiments on rabbits, in which the symptoms of the disorder were reproduced. The authors are not as yet in a position to state thoroughly all the morphologic characteristics of these micro-organisms, but they ascertained the following details: I. They are minute cocci associated in pairs varying in size but averaging .5 of a micron in diameter. 2. In liquid media they grow in chains. In solid media they grow in masses that resemble the staphylococci. 3. They are both anaerobic and aerobic. The authors find the best culture-medium to be milk and bouillon slightly acidified with lactic acid, and the organisms grow rather better in the anaerobic than the aerobic tubes. They believe that there is little doubt of their identity with those discovered by Triboulet in 1897 and Wassermann in 1899. They can not say that it is the sole cause of rheumatic fever in view of the statements of Achalme, Thiroloix and others. There is a strong clinical likeness between rheumatic fever and the disease produced by this diplococcus in rabbits. The diplococci are found in the tonsils, in the cardiac valves, pericardium, and in the nodules of fatal cases of rheumatic fever, and Poynton and Paine have also isolated them from the joint exudation, heart blood and kidneys of rabbits as well as from the liver and lungs. The demonstration of these organisms in man is not easy. This they lay to the fact that rheumatic fever is essentially a disease in which there is great resistance; even in fatal cases the reparative processes are often well defined at the site of some of the local lesions and the tissues in which they are found are more difficult in structure to investigate. In concluding their paper they remark that the term "infective endocarditis," which has been for some time under suspicion, can not be used longer in contradistinction to "rheumatic endocarditis" for both are plainly infective. They believe that their investigation has made the relation of malignant endocarditis, as they prefer to call it, to rheumatism much clearer. In simple rheumatism the diplococci are not found at first on the surface of the valves, and the disease tending as it does to recovery, they are destroyed by phagocytosis and possibly in other ways, the valve undergoing sclerosis. In the malignant type they reach the free surface and multiply with great rapidity and if they are detached by force of the blood-stream they may possibly give rise to a condition of rheumatic septicemia recognized clinically as malignant endocarditis.

British Medical Journal, September 29.

A Discussion on Influenza as It Affects the Nervous System.—The discussion was opened with a paper by Dr. Judson S. Bury, who called attention to the nervous system in influenza, stating that we assume and have proof that in this condition the brain tissues are attacked by bacilli in the first group of cases he considered. The disease develops during and after the febrile stage, sometimes being the sole representative of the effects of the influenza poisoning; meningitis and hemorrhagic encephalitis are the best examples of this type. In the second group are placed nervous diseases which usually occur after the attack has subsided; neurasthenia and multiple neuritis are examples. Here it is assumed that the toxins produced by the bacilli are more dilute and less virulent than in the first group. The division is not strictly correct, but is convenient from a clinical standpoint. Of the nervous symptoms belonging to the first group he notices first the comatose type. An examination of the brain may reveal nothing abnormal, or there may be congestion and even purulent meningitis with or without an encephalitis. The meningitis may accompany encephalitis or may exist secondary to a purulent otitis. The delirious attack is another manifestation; in contrast to the drowsiness and unconsciousness there is restlessness, irritability and delirium, and even mania. Cases of both kinds were reported. Spinal paralyses have been also noticed, and in rare instances show themselves during the attack. They may constitute, as in the cerebral type, its salient features. Of the second group he notices and reports cases of local and more or less general paralysis involving the spinal cord and nerves, as well as neurasthenias occurring as sequelæ to influenza. The discussion on this paper was quite general and was participated in by Drs. Broadbent, Allbut, Eade and others. Dr. Allbutt agreed with Bury in thinking that the frontal cerebral lobes are preferentially attacked by influenza.

A Discussion on the Problems of Gastric Ulcer.—Payne opened the discussion by giving the statistics of St. Thomas' Hospital, and assuming that the first problem of gastric ulcer is whether it is increasing; he thinks it really no more prevalent than formerly. The second problem refers to diagnosis. He thinks that pain is not often characteristic or typical; in a number of cases it was not even mentioned, and in one fatal case it was positively stated that there was no pain whatever. Hematemesis, the only characteristic symptom, was definitely recorded in but seventeen out of forty-eight fatal cases. As to hyperacidity, which has been made much of lately by some German physicians, he has nothing to say at present, as he has not been willing to wash out the stomach in suspected gastric ulcer. The general conclusions seem to be that while hematemesis is accompanied by other gastric symptoms as the most trustworthy sign, it is not absolute and may be due to many other causes. As to whether we can draw a clear distinction between acute and gastric ulcer, he is inclined to answer in the negative. The etiology of gastric ulcer is discussed, and he holds that there is no evidence in favor of the bacterial origin. The theory that it is due to disturbed innervation seems hardly worth considering. The hypothesis of hyperacidity might account for the continuance of the ulcer, but not for its commencement. Payne therefore concludes that we have not at present a very plausible explanation of the origin of the lesion. The predisposing causes are also questioned by him. He does not find that it is so exclusively met with in the poor and the female sex, among servant girls, etc., as generally held. As regards its prognosis, the acute ulcer tends to recover, so that in the young the prognosis is relatively good, but in chronic ulcer it is not so favorable and the only difference between the acute and the chronic disease is in its duration. During treatment he prefers to have water taken by the mouth, as it is less likely to do harm than in the reverse course, and it certainly assists the patient to go longer with rectal feeding. In conclusion he asks if acetonuria is a frequent accompaniment of rectal feeding. In the discussion of Payne's paper Gordon believed that the microbic theory of the origin of gastric ulcer explains the facts better than any other.

The Origin of Gout. WILLIAM RINGROSE GORE.—The author combats the uric-acid theory of the cause of gout, though the blood always contains uric acid, but whether it increases in the acute attack is very doubtful. Its presence is only a symptom and would be produced by the action of the digestive toxins on the liver. His conclusions are that gout is not due to the presence of uric acid in the blood, but these symptoms are due to toxins and this toxin is formed by the action of one of the intestinal bacilli on the intestinal secretion specially altered by diet, and this alteration is assisted by hereditary predisposition.

Subcutaneous Saline Infusions in Pneumonia. William Ewart and Beaumont Percival.—Cases are reported bearing on the question of the value of saline subcutaneous infusions in pneumonia, especially in connection with the results published by Dr. Clement Penrose, of Baltimore. They classify cases as regards their prognosis into two groups: 1. Those likely to recover. 2. Those almost sure to be fatal. The first group does not lend itself to any profitable therapeutic investigation, but there is still a third class with uncertain and serious, though not hopeless, prognosis, which may test thoroughly the therapeutic methods. The cases here reported were all selected on account of their gravity, and injections in all were administered with strict antiseptic precautions. In one of the six recovery took place, the others died. Briefly stated, the practical conclusions are as follows: 1, in the severe cases treated no unfavorable results were observed from the saline infusions; 2, these seemed to delay rather than to accelerate the fatal termination; 3, they were not resented by the patients, and by some of them they were acknowledged to be comforting; 4, they were powerless to check the fatal course of the pneumonia in the worst type of cases; 5, they do not seem, except in Case 4, where no pus but clear serum exuded from the cut surface of the gray hepatisation, to have made any difference in the characteristic appearances of the pulmonary changes. At the same time, while the results have been disappointing, they do not suffice to prove that saline infusions are absolutely useless. A different combination, a larger bulk, or a greater frequency of administration might lead to very different results. The cases reported were exceptionally severe, and may have been incapable of recovery. "The effects noticed were, nevertheless, in our estimation, such as to recommend the method for a more extensive trial in cases with anxious prognosis; for among them cases may occur which are not of the worst type, and in which an installment of relief, such as that observed in some of the cases reported, might be sufficient to save life."

Consanguinity as a Factor in the Etiology of Tuberculosis. Charles A. Davies.—Davies discusses the subject of consanguinity in its relation to the etiology of tuberculosis, from the study of facts as shown in the Isle of Man. This is a small territory where intermarriage has taken place to a great extent, varying, however, in certain localities, which fact aids in this study. Its mortality from tuberculosis is very high, the annual mortality being 25.7 per 10,000; roughly speaking, this is about double the rate prevailing in England and Wales. The climatic conditions are eminently favorable to life. The sunshine is greater than in most parts of the British Islands. The winds are similar to those on the mainland and the combination of mountain and sea air seems to be conducive to health, and Davies thinks that the whole climate is eminently suitable for the treatment of lung disease. The soil is dry and fairly well drained and he has not come across a single case of malnutrition due to poverty. As a rule the natives are well nourished in body, and happy and contented in mind. The two chief occupations are agriculture and fishing, though many of the men follow the calling of mariners, and there is a little lead-mining. There is no excuse for the high amount of tuberculosis other than consanguinity; in one parish where the inhabitants have long been comparatively isolated from the other parts there is a notorious amount of consumption, and a remarkable freedom from it prevails in another region where the condition in this regard is the reverse. After a careful study of the whole question, he has come to conclude that the chief factor in the production of tuberculosis in the Isle of Man is consanguinity.

Archives Gen. de Medicine (Paris), August and September.

Importance of Arterial Pressure in Anesthesia. S. Duplay and L. Hallion.—Death in chloroform or ether anesthesia is due primarily to the reduction of the arterial pressure caused by the drug. The phenomena noted in the arterial pressure and the pulse are not such as are observed in asphyxia. Extensive experimental research on dogs has shown that the reduction of the arterial pressure to zero and complete suppression of the heart-beat are preceded, it is true, by a complete syncope of the respiration, but the drop in the arterial pressure has already commenced its downward course before the respiration is suspended. If this reduction has progressed beyond a certain point it is impossible to arrest and restore it, but within this limit it is possible by suspending the administration of the chloroform or ether and by artificial respiration to arrest the drop in the arterial pressure and bring it back to normal. The immediate factor of death, therefore, in chloroform or ether anesthesia is the diminished arterial pressure. Consequently, if we register and watch the condition of the arterial pressure during anesthesia, we will be kept informed as to the effects of the poison in the system and be able to graduate the necessary intoxication and keep it inside the danger limit. "Nothing is easier and more harmless than to administer chloroform to a dog indefinitely if a manometer is applied to an artery and the register watched for the slightest indication of danger." In one of the curves cited the amount of chloroform was graduated to keep the arterial pressure between 10 and 13 cm. mercury. No information derivable from the pulse, the respiration nor the corneal reflexes would have allowed such accurate regulation and such complete absence of danger. The harmless zone is easily established. Once past this zone the reduction in the blood-pressure irremediably continues its downward course. Other points mentioned in this article are that artificial respiration has probably a massaging effect on the intrathoracic vessels, and that direct digital massage of the heart might prove useful in raising the blood-pressure when restoration by all other means has failed.

Spontaneous Rupture of Gall-Bladder. S. Machard.—In the 39 cases of rupture of the gall-bladder on record, 22 were caused by lithiasis, 10 by typhoid infection, 3 by infectious icterus and 4 were of unknown origin. Machard describes a fatal case in which the dilatation and rupture of the organ was due to adhesive supra-umbilical peritonitis, associated with perivisceritis, liver and lung affections and interstitial nephritis. If diagnosed in time, cholecystostomy offers the best chances for intervention. In all cases of dilatation of the gall-bladder with peritonitis, spontaneous improvement should not be awaited, as perforation is liable to occur at any moment.

September

Typhoid Fever in the Course of Active Syphilis. G. Etienne.—In the writer's experience of 600 to 700 cases of typhoid fever, five extremely severe cases were observed to occur in patients with concomitant active syphilis. In another case multiple exostoses developed a few months after a typhoid fever in a syphilitic. The evidence seems to show that active syphilis aggravates the course of typhoid fever and is not attenuated by the latter, as some claim.

The Diabetograph. F. Coulhon.—A graduated glass tube with a stopcock at the lower quarter, below which the tube tapers to a point, is the simple apparatus with which it is possible to estimate the exact amount of sugar in the urine without any calculation. Experience is confirming its mathematical precision and rapid and easy manipulation. The tube is filled with urine to a certain point, and 2 c.c. of Fehling's solution are boiled in another vessel, diluted with five or six times its amount of water. The urine is added to the reagent by turning the stopcock at the bottom of the tube. When the reaction occurs in the solution the figure on the tube to which the urine has fallen indicates the amount of sugar in a liter of urine. The graduation on the tube is calculated according to the fact that when one volume of urine reduces an equal volume of Fehling's solution, there must be 5 gm. of sugar in a liter of the urine.

Echo Medical (Lille), September 6.

Antagonism Between Typhoid Fever and Syphilis. Mariau.—Among the points discussed at the International Medical Congress was the tendency of typhoid fever to attenuate a pre-existing or simultaneous syphilis. Ducrey stated that it extinguished the syphilitic infection and Julien reported the case of a patient with a typical primary indurated chancre who was taken with typhoid fever. The chancre rapidly healed and during the twenty-five years since he has never had any

further manifestations of specific infection. Mariau, on the other hand, has observed a case in which severe primary syphilis was ameliorated to practical recovery by specific treatment. After a year of health the patient contracted typhoid fever with two relapses. During his convalescence a new specific eruption appeared on the trunk, indicating a revival of the syphilitic process. Mariau therefore warns that concomitant typhoid fever is no reason for neglecting specific treatment.

Gazette Hebdomadaire (Paris), August 19 and September 13.

Forcible Reduction of Hump in Pott's Disease. A. BROCA.—Fifty-five out of the 83 cases of Pott's disease treated by Broca date from more than a year ago. Forcible reduction during horizontal traction was done in 46, with the immediate application of a plaster cast embracing the thighs and part of the head, during suspension in narcosis. Of the entire method of forcible reduction introduced by Calot, nothing has survived except the application of the cast in suspension. The hump has returned in every one of Broca's cases except in 10 fresh ones, in which the traction alone was sufficient to straighten the spine. He considers two or three months of dorsal decubitus indispensable, with at least a year of immobilization.

September 13.

Immunity of One Twin to Infection. CUCHE.—One twin is apt to be weakly, to bear the entire burden of inherited infection, tuberculous, syphilitic, etc., while the other twin is exempt. Cuche states that this has occurred with such regularity in his experience that he is inclined to suspect some law regulating the phenomenon.

Semaine Medicale (Paris), September 28.

Physiologic Action of Mountain Climate. J. JAQUET.—The effect of altitude on the blood was tested in a series of experiments on rabbits. It was found that reduction of the atmospheric pressure equivalent to 100 mm. of mercury was sufficient alone, apart from any other factor of mountain climate, to change the composition of the blood in the same way as is observed after a trip to the mountains. The total amount of hemoglobin increased 20 per cent. Six rabbits, before the test, averaged 5,530,000 red corpuscles and 12.7 per cent. hemoglobin. The reds increased by the end of four weeks to 5,749,000, and the hemoglobin to 12.97 per cent. Six others under the same conditions in every respect, except that the air was rarefied to correspond with the atmospheric pressure at Davos, showed an increase of red corpuscles from 4,552,000 to 6,091,000, and of the hemoglobin from 11.54 to 14.40 per cent. The total amount of hemoglobin corresponding to one kilogram of the animal's weight was, at the close of the tests, 23.7 per cent. more than in the control animals. The dryness, cold and other features of high altitudes, tested separately, had no appreciable influence on the composition of the blood. Jaquet also experimented on himself and a companion. For four weeks all the food was analyzed and exactly the same quantity taken each day. The first seven days were spent at Basle, then thirteen at Chasseral, in the Jura mountains, at an elevation of 1600 meters, concluding with seven days after the return to Basle, omitting from the calculations the trips to and from the mountains. Each day the urine and feces were weighed and analyzed. The interesting results are tabulated in full. They demonstrate that the modification of the blood and the metabolism of nitrogen closely parallel each other. The increase in the red corpuscles and in the hemoglobin during the stay in the mountains was accompanied by a marked decrease in the nitrogen eliminated. After return to the lower altitude the reds and the hemoglobin gradually diminished, while the elimination of nitrogen increased in inverse proportion. The amount of nitrogen retained by the organism was much more than could have been required for the neoformation of the elements of the blood. This suggests that the action of altitude is not restricted solely to the blood-formation, but that it may induce a partial protoplasmic regeneration throughout the organism, conferring new vitality and resistance on other elements besides the blood. He states that this general modification of the tissues affects also the respiratory interchanges, as he will describe in a later communication.

Berliner Klinische Wochenschrift, September 27.

Etiology of Chronic Edema. H. ROSIN.—A woman of 42 presented a typical case of progressive, simple, diffuse edema of the skin without participation of any organ in the morbid process. Abnormal permeability of the vessels is the probable cause, such as Senator accepts as the cause of hydrops-anasarca in renal affections. Magnus has artificially induced edema of the skin by hydremic plethora in experiments on animals with certain toxins.

Polyneuritis Consecutive to Malaria. C. A. EWALD and BAUMSTARK.—Motor paralysis and atrophy of the muscles were observed in three cases consecutive to malaria contracted in Kameroon. One case developed a rapidly fatal Landry's paralysis. The central nervous system was found intact, confirming the assumption that certain kinds of paralysis are primarily due to an acute polyneuritis in the peripheral nerves. In another case the polyneuritis was accompanied by mental confusion.

Centralblatt f. Bakteriologie (Jena), August 22 and September 4.

The Mechanism of Infection. A. RADZIEVSKY.—A fatal infection in animals is not due exclusively to the multiplication of microbes. Large numbers are destroyed by the juices of the organism, sometimes entirely outside the cells. The organism is not passive in infections, but takes an active part, producing substances to destroy the microbes. When they are killed and dissolved their toxins are liberated and to this is due the clinical aspect of the infection. The organism reacts the same to a fatal as to a non-fatal infection. The difference is merely the amount of the final intoxication. The increase in the virulence of microbes after passage through animals is due to the tendency of the juices to destroy them.

To Free a City from Mosquitoes. C. FERMI.—The organized efforts which resulted in freeing the city of Sassari from mosquitoes have already been described in THE JOURNAL, xxxiv, p. 1576. Fermi remarks that it is unnecessary to use more than 5 c.c. of petroleum to a square meter of surface in killing the larvæ in water, and that, as they require fifteen to twenty days to develop, renewal of the oil is not necessary for fourteen days. He mentions that Mionte, in Ionia, and Pergamo, in Asia, were abandoned by the inhabitants in ancient times on account of the numbers of mosquitoes.

Protection of Man Against Mosquitoes. C. FERMI.—There is very little prospect that any chemical means of warding off mosquitoes will prove effective. Out of the countless substances tested, only the fumes of chlorin and ammonia, and wood and tobacco smoke proved to have any effect.

Prophylaxis of Malaria. E. DI MATTEI.—Four workmen, who had never had malaria, were brought from Catania to Valsavoia every evening at 5:30. They were hurried from the train, a few steps, to a large two-roomed building, where they spent the night, and were taken back to Catania for their day's work next morning at 7:30. The numerous windows and the door were all open, but closely screened. The inside walls were white, to detect any mosquito that might force an entrance when the door was opened to admit the men and then closed until the next morning. Di Mattei accompanied them every night. The experiment lasted thirty-three days and none of the party showed the least trace of malarial infection at any time. No quinin nor medicines of any kind were administered. Valsavoia is one of the most notoriously malarial spots in Sicily.

Cntralblatt f. Kr. der Harn u. Sexual-Organ (Leipsic), September 15.

Primary Carcinoma of the Urethra. HOTTINGER and OBERLAENDER.—The first symptom of the lesion was a discharge from the urethra in the four cases reported. They raise the total number of cases of carcinoma of the urethra to twenty. The benefit of operation is evident. The two operated on are in good health now, 3 and 4½ years later. In one case the carcinoma occurred in a diabetic.

Deutsche Medicinische Wochenschrift (Leipsic), September 20.

Morphology of Bacteria an Indication of Their Virulence. H. MARX.—The small, spherical, metachromatic bodies first observed in the bodies of bacteria by Babes and Ernst are not found in all. Research at von Bergmann's clinic, described in this article, has demonstrated that these Babes-Ernst bodies

are the result of the condensation and localization of the euchromatic substance of the bacterial cell, and that this euchromatic substance is the germ-plasma, while the rest of the cell is merely the nutritive plasma. When the bodies occur in many or all of the individuals of a species they indicate that this species is at its highest point of vital and functional activity and living in its natural environment. The further removed the generation from this environment, the fewer bodies are found, but they increase again on return to it. When the vitality is most intense the bodies are the smallest and stain most decidedly, while the rest of the bacterial body stains the least, probably because all the euchromatic substance is included in the bodies. When the species is in a pure culture, apart from injurious influences, such as bactericidal secretions and danger of being overwhelmed by another species, it becomes torpid and loses its energy, its specific virulence. It can be aroused, however, even when half dead, and stimulated to renewed vital and functional vigor by being passed through the body of a living animal or by symbiosis with other bacteria on a plate of agar-agar. The bacterium, as soon as it enters the circle of existence of another organism, has to put forth all its energies to maintain itself in the struggle for existence, and the exertion of all its powers is shown in the formation of the Babes-Ernst bodies in its interior. These discoveries suggest that infection is in its essence the vital expression of the parasitism of a microbe in its highest potency, and that the route from the condition of a saprophyte to that of a parasite leads through morphologic transformation. We can watch a bacterium traveling this route when we pass specimens with rare Babes-Ernst bodies through a living animal which succumbs to them. When they emerge every individual contains one of these bodies. Or, again streptococci and other bacteria may be present in human saliva, with the bodies rare. If erysipelas of the face ensues, the streptococci will be found more numerous in the saliva and every coccus will contain a Babes-Ernst corpuscle. Marx therefore deduces from his extensive research on numerous species of bacteria that a bacterium accomplishes its transition from a non-infecting non-virulent to an infecting virulent micro-organism by the occurrence in its body of the condensation and localization of the euchromatic substance, which leads to the formation of the Babes-Ernst bodies. The number of individuals containing these corpuscles is therefore a measure of the virulence at the time, and the capacity of the cells to form these corpuscles is the criterion of their future virulence. He is now engaged in research to determine the factors involved in the production of this capacity. He begs others to test his assertions with fresh pus, sputa, etc., employing the technique he described in his first communication on the subject in the *Cbl. f. Bakteriologie*, July 11 to August 9, 1900, Nos. 1 to 5: Thickly spread and dried coverglass preparations mounted in balsam, after having been passed three times slowly through a flame, are treated first with methylene blue—mixed Loeffler's, alcohol-aqueous and acetic—for five to ten seconds, then rinsed briefly with water and stained with bismarck brown—vesuvin—at 2 per thousand, for fifteen seconds. No special heat is applied. The bodies in the bacteria stain from deep blue to bluish red. The rest of the body is brown. As the bodies take the stain more readily and more intensely the greater the virulence of the bacteria, examination of their behavior to the stain is direct evidence of their virulence and of the gravity of the infectious process whence they were derived.

Therapie der Gegenwart (Berlin), September.

Treatment of Cholelithiasis. B. Naunyn.—In this review of the modern consensus of opinion in regard to the treatment of cholelithiasis, Naunyn states that he has observed four recurrences after operations for removal of gall-stones. He favors measures to soothe instead of stimulate peristalsis, and believes that Carlsbad waters probably owe their effect to the increased supply of blood in the abdominal organs which they induce. Their benefits can be enhanced by the application of heat, cataplasms or the thermophore, to the liver.

Important Relations of Fat Food to Gastric Functions. H. Strauss.—Hyperacidity of the stomach and disturbances in the motility are favorably influenced and to a marked degree by fats, and especially milk fats, cream and butter. Large amounts of milk fats diminish the gastric secretions, but do not prolong the length of time the ingestum remains in the stomach nor interfere with intestinal digestion in hyperacid patients, who always relish these fats better than large amounts of carbohydrates. During the last three years this method of treatment has been almost constantly followed at Senator's clinic in cases of ulcus ventriculi, hyperacidity or motor insufficiency. One patient throve well on two quarts of milk a day and half a pound of butter. A colleague with ulcus promptly gained twenty pounds in weight.

Sanatorium Treatment of Tuberculosis. S. Kaminer.—The most important factor in sanatorium treatment is an early diagnosis, and for this reason Kaminer urges compulsory examination of members of sick-benefit societies four times a year.

Oil in Case of Stenosis of the Pylorus. Cohnheim.—Oil relieves the contraction, is healing and nourishing and is an invaluable aid in case of stenosis of the pylorus. He gives 200 to 250 gm. of warm olive-oil in three doses, or all at once, one hour before meals, by the mouth or through a sound.

Wiener Klinische Wochenschrift, September 20.

Inhalations as Preventive of Scarlet Fever and Measles. J. Elgart.—The author's experience has convinced him that the throat affection in exanthematous diseases is primary and in reality the essence of the disease. He consequently reasoned that prompt sterilization of the throat would abort or prevent the disease. He is assistant physician at a large children's hospital where epidemics of scarlet fever and measles have been of frequent occurrence, children succumbing who had entered the hospital merely for ear or eye troubles, etc. In 1897 he inaugurated a system of inhalations, requiring every child to stand for five minutes in front of a spray apparatus and inhale the spray for five minutes twice a day. The disinfectant used was a 3 per cent. solution of boric acid or lime-water, or iodin trichlorate in a .05 per cent. solution. The number of children thus treated was 214, and not a single case of either scarlet fever or measles occurred during the year. During a temporary absence the inhalations were suspended and three cases of scarlet fever or varicella developed. On his return the inhalations were resumed and there has not been a case since to date. He observes that it is less expensive to sterilize the nose and throat of the patient than to disinfect a suite of rooms. If the experience of others confirms his results, we can assume that inhalations of a disinfectant fluid will prevent epidemics of scarlet fever and measles, at least when the type of the epidemic in the environment is mild. In 510 cases previously noted in the hospital the presence of an angina is mentioned in every case except eight. In two of these no inquiry was made in regard to the condition of the throat and in the rest not until about the sixth day, when a pre-existing angina might have had time to subside.

Klinitchesky Journal (Moscow), August.

Experimental Medicinal Cure of Gall-Stone Affections. N. D. Titoff.—Tests on nine large dogs are described in which the gall-bladder was incised and one or two human cholesterin calculi inserted. The wound was then closed and efforts made to dissolve the calculi by medicinal measures. They were successful beyond anticipation. If confirmed by future experience the fact is established that gall-stones can be artificially dissolved by way of the intestinal and biliary passages. Three Pravaz syringefuls of a mixture of 1 part ether to 2 parts benzol were injected per rectum. The injections were well retained and no local nor general unfavorable symptoms were observed. Traces of cholesterin crystals could be found in the bile aspirated even as soon as a half hour afterward. The stone had lost 16.5 mg. in weight when the animal died, two weeks after these injections had been inaugurated, in one case. These experiments demonstrate that the medicinal treatment of gall-stones has a solid foundation and that the only problem is to administer the benzol or other dissolvant in the least irritating form, possibly as terpin hydrate with euchinin or turpentin and quinin. In some of the experiments no medicine was

used, but the stone diminished .013 to .01545 mg. The chloroform given during the operation may have been responsible in one case, but in the other no chloroform was used. This result seems to indicate that the natural bile of dogs is able to dissolve cholesterin calculi in certain cases at least.

Anales de Oftalmologia (Mexico), September.

Ocular Affections in the Negro. SANTOS FERNANDEZ.—This number of the *Anales* contains a full report of the ophthalmic section at the International Medical Congress, in which Santos Fernandez took a prominent part. He stated, among other communications, that the negro is comparatively exempt from ocular affections, and especially from disturbances of the lachrymal canals, which are unusually large. In his experience during the last twenty-five years in Cuba he has only had 3003 negro and 2528 mulatto patients out of a total of 28,000 ophthalmic cases. He adds that the negro seems to be comparatively immune to affections of all kinds.

Books and Pamphlets.

Acknowledgement of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review as dictated by their merits, or in the interest of our readers.

BOOKS.

PROGRESSIVE MEDICINE. A Quarterly Digest of Advances, Discoveries and Improvements in the Medical and Surgical Sciences. Edited by Hobart A. Hare, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia, Assisted by Charles Adams Holder, M.D., Assistant Demonstrator of Therapeutics in the Jefferson Medical College. Volume III. September, 1900. Diseases of the Thorax and Its Viscera, Including the Heart, Lungs and Blood-vessels; Diseases of the Skin; Diseases of the Nervous System; Obstetrics. Cloth. Pp. 408. Price $10.00 per year. Philadelphia and New York: Lea Brothers & Co. 1900.

THE STUDENT'S MEDICAL DICTIONARY, Including All the Words and Phrases Generally Used in Medicine,, With Their Proper Pronunciation and Definitions. Based on Recent Medical Literature. By George M. Gould, A.M., M.D., Editor Philadelphia Medical Journal. With Elaborate Tables of the Bacilli, Micrococci, Leucomains, Ptomains, etc.; of the Arteries, Ganglia, Muscles and Nerves; Weights and Measures, Analyses of the Waters of the Mineral Springs of the United States, etc., and a New Table of Eponymic Terms and Tests. Eleventh Edition, Enlarged with many Illustrations. Cloth. Price, $2.50. Philadelphia: P. Blakiston's Son & Co. 1900.

YOU AND YOUR DOCTOR. How to Prolong Life. A Practical Book on Health and the Care of It. A Fearless Exposé of All Quacks and Frauds Within and Without the Medical Profession. By William B. Doherty, M.D., Member of the Kentucky State Medical Society. Illustrated. Cloth. Pp. 260. Price, $1.00. Chicago: Laird & Lee.

A TREATISE ON MENTAL DISEASES. Based upon the Lecture course at the Johns Hopkins University, 1899, and Designed for the Use of Practitioners and Students of Medicine. By Henry J. Berkley, M.D., Clinical Professor of Psychiatry, Johns Hopkins University. With Frontispiece, Lithographic Plates and Illustrations in the Text. Cloth. Pp. 601. Price, $5.00. New York: D. Appleton & Co. 1900.

A MANUAL OF OTOLOGY. By Gorham Bacon, A.B., M.D., Professor of Otology in Cornell University Medical College, New York; with an Introductory Chapter by Clarence John Blake, M.D., Professor of Otology in Harvard University. Second Edition, Revised and Enlarged. With 114 Illustrations and 3 Plates. Cloth. Pp. 422. Price, $2.25. New York and Philadelphia: Lea Brothers & Co. 1900.

A TREATISE ON DISEASES OF THE NOSE AND THROAT. By Ernest L. Shurly, M.D., Vice-President and Professor of Laryngology and Clinical Medicine, Detroit College of Medicine. Illustrated. Cloth. Pp. 744. Price, $5.00. New York: D. Appleton & Co. 1900.

THE PHYSICAL SIGNS IN PULMONARY DISEASE. By Graham Steell, M.D., Fellow of the Royal College of Physicians of London. For the Use of Clinical Students. Second Edition. Cloth. Pp. 98. Price, $1.25. Philadelphia: P. Blakiston's Son & Co. 1900.

THE USE OF THE SPHYGMOGRAPH IN CLINICAL MEDICINE. By Graham Steell, M.D., F.R.C.P., Physician to the Manchester Royal Infirmary. Cloth. Pp. 57. Price, $1.00. Philadelphia: P. Blakiston's Son & Co. 1900.

TRANSACTIONS OF THE AMERICAN SURGICAL ASSOCIATION. Volume xviii. Edited by De Forest Willard, M. D., Ph.D., Recorder of the Association. Cloth. Pp. 468. Printed for the Association. For Sale by William J. Dornan, Philadelphia. 1900.

TRANSACTIONS OF THE LOUISIANA STATE MEDICAL SOCIETY, at its Twenty-First Annual Session, held at New Orleans, La., April 19, 20, 21, 1900. Cloth. Pp. 427.

WARNER'S NEW THERAPEUTIC REFERENCE BOOK. By William R. Warner. Cloth. Pp. 225. Price, 0.25. W. R. Warner & Co.

TRANSACTIONS OF THE OHIO STATE MEDICAL SOCIETY, at its Fifty-Fifth Annual Meeting, held at Columbus, Ohio, May 9, 10, 11, 1900. Cloth. Pp. 422. Cleveland, Ohio: J. B. Savage.

TRANSACTIONS OF THE NORTH DAKOTA STATE MEDICAL SOCIETY for the year 1899, and List of Members. Paper. Pp. 136. St. Paul, Minn.: Northwestern Lancet. 1899.

MEDICAL DISEASES OF INFANCY AND CHILDHOOD. By Dawson Williams, M.D., Fellow of the Royal College of Physicians of London. Second Edition Revised with Additions by Frank Spooner Churchill, M.D., Instructor in Diseases of Children, Rush Medical College. Illustrated witht 72 Engravings and 2 Colored Plates. Cloth. Pp. 542. Price, $3.50 net. Philadelphia and New York: Lea Brothers & Co., 1900.

MANUAL OF THE DISEASES OF THE EYE. For Students and General Practitioners. With 243 Original Illustrations including 12 Colored Figures. By Charles H. May, M. D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, New York. Cloth. Pp. 406. Price, $2.00. New York: William Wood & Co. 1900.

TRANSACTIONS OF THE VERMONT MEDICAL SOCIETY. D. C. Hawley, M.D., Secretary. Annual Meeting in 1900, at Rutland, Oct. 11 and 12. Cloth. Pp. 231. Burlington, Vt.: Free Press Association. 1900.

A CHILD OF LIGHT, or Heredity and Prenatal Culture. Considered in the Light of the New Psychology. By Newton N. Riddell. Cloth. Pp. 351. Price, $2.00. Chicago: Child of Light Publishing Co. 1900.

TWENTY-SIXTH ANNUAL REPORT OF THE SECRETARY OF THE STATE BOARD OF HEALTH OF THE STATE OF MICHIGAN for the Fiscal Year Ending June 30, 1898. Cloth. Pp. 395. Lansing, Mich.: Robert Smith Printing Co. 1900.

TRANSACTIONS OF THE MEDICAL SOCIETY OF THE STATE OF NEW YORK, for the Year 1900. Cloth. Pp. 522. Published by the Society. 1900.

THE BOOK OF THE RULES OF THE MEDICAL ASSOCIATION OF THE STATE OF ALABAMA. Cloth. Pp. 243. Montgomery, Ala.: Brown Printing Co. 1889.

PAMPHLETS.

A CASE OF MALTA FEVER. AMYLOID DISEASE OF THE LIVER WITH AN ABNORMALLY ENLARGED LEFT LOBE. CANCER OF THE COMMON BILE-DUCT. INDICATIONS FOR THE USE OF ALCOHOLIC STIMULANTS IN TYPHOID FEVER. ON THE USE OF ANTITOXIN IN DIPHTHERIA; With Special Reference to Small and Frequently Repeated Doses. By John H. Musser, M.D., Philadelphia. Reprints.

A CRUSHABLE BUTTON AS AN AID TO SUTURING IN INTESTINAL ANASTOMOSIS. By R. C. Coffey, M.D., Portland, Ore. Reprinted from the Med. Sentinel.

A STUDY OF DIABETES—ITS NATURE, CAUSE AND CURE. By S. G. Hubbard, M. D., New Haven, Conn. Reprinted from Proceedings of Conn. Med. Society.

CEREBRAL LOCALIZATION. HYPNOTISM IN THERAPEUTICS. By Sydney Kuh, M.D., Chicago. Reprints.

ESPECIAL HOSPITALS FOR CONSUMPTION AMONG THE POOR IN OUR CITIES. By Edward O. Otis, M.D., Boston, Mass. Reprinted from Phila. Med. Jour.

HOW SHALL BOARDS OF HEALTH PROCEED TO PREVENT THE SPREAD OF COMMUNICABLE DISEASES? THE PATIENT'S SECRET. By Daniel Strock, M.D., Camden, N. J. Reprints.

OBSERVATIONS ON THE TREATMENT OF EPILEPSY. By A. N. Williamson, M.D., New Haven, Conn. Paper. Pp. 15. New Haven, Conn.: E. E. Darrow. 1900.

PRESENTATION OF THE CODE OF ETHICS. By W. P. Munn, M.D., Denver, Colo. Reprinted from Denver Med. Times.

SOME CASES OF DILATATION OF THE STOMACH. By John H. Musser, M.D., Philadelphia, and J. Dutton, Steele, M.D., Philadelphia. Reprinted from Am. Jour. of Med. Sciences.

SOME PROBLEMS CONCERNING NERVOUS DISEASE. By F. W. Langdon, M.D., Cincinnati, Ohio. Reprinted from Brooklyn Med. Jour.

THE DIAGNOSIS OF HYSTERIA. TWO CASES OF GENERAL ANESTHESIA. By Charles W. Burr, M.D., Philadelphia. Reprints.

TOTAL EXCISION OF THE SCAPULA ALONE AND WITH THE ARM (INTERSCAPULO-THORACIC AMPUTATION); PARTIAL EXCISION OF THE SCAPULA FOR TUMOR. By J. J. Buchanan, M.D., Pittsburg, Pa. Reprinted from Phila. Med. Jour.

TRANSACTIONS OF THE OPHTHALMOLOGIC DIVISION OF THE WESTERN OPHTHALMOLOGIC AND OTO-LARYNGOLOGIC ASSOCIATION, at its Fifth Annual Session, held in St. Louis, Mo., April 5, 6 and 7, 1900. Paper. Pp. 64. St. Louis, Mo.: American Journal of Ophthalmology.

ABNORMAL ELECTRICAL STORAGE IN THE HUMAN SYSTEM. James Grant, M.D., F.R.C.P., Ottawa. Reprinted frfom Montreal Med. Jour.

ABORTION. A. D. Wilkinson, Lincoln, Neb. Reprinted from Western Med. Review.

A CASE OF CATARACTA NIGRA, WITH SPECIMEN, AND A CASE OF PULSATING EXOPHTHALMOS, WITH PATIENT. Geo. C. Pardee, Ph. B., A.M., M.D., San Francisco, Cal. Reprinted from Transactions of Med. Society of State of California.

A CASE OF PARALYSIS AGITANS—CURE. Nathan Herman, M.D., Baltimore. Reprinted from Md. Med. Jour.

CHRONIC LACUNAR TONSILITIS. Charles E. Clark, M.D., Kansas City, Mo.

ACUTE ENLARGEMENT OF THE THYROID GLAND, WITH REPORT OF CASES. AORTIC REGURGITATION WITH REMARKS UPON FLINT'S MURMUR AND PAROXYSMAL SWEATING. THE IMMEDIATE AND RE-

NOTE EFFECTS OF ATHLETICS UPON THE HEART AND CIRCULATION. THE DIAGNOSIS OF CHLOROSIS AND CHLOROANEMIA. Alfred Stengel, M.D., Philadelphia. Reprints.

AN ESSAY ON THE REDUCTION OF OBEISITY: A Reliable and Harmless Way to Diminish and Cure Over-Fatness. By William T. Cathell, A.M., M.D., Baltimore. Reprinted from Md. Med. Jour.

ANNUAL REPORT OF THE BOARD OF HEALTH OF THE CITY OF LANCASTER, PA., for the Fiscal Year Ending December 31, 1899. Paper. Pp. 149. Lancaster, Pa.: Halbach, Printer.

CHARGES, EVIDENCE AND ARGUMENTS ON WHICH DR. J. F. BALDWIN WAS EXPELLED AS CHANCELLOR AND PROFESSOR OF OPERATIVE GYNECOLOGY by the Trustees of the Ohio Medical University. Paper. Pp. 128. Columbus, Ohio: The Landon Printing and Publishing Co. 1899.

CHARLES FREDERICK WIESENTHAL, MEDICINAE PRACTICUS, THE FATHER OF THE MEDICAL PROFESSION OF BALTIMORE. Eugene F. Cordell, M.D., Baltimore. Reprinted from Johns Hopkins Bulletin.

CONSERVATIVE AND RADICAL SURGERY OF EMPYEMA. O. Thienhaus, M.D., Milwaukee, Wis. Reprinted from Milwaukee Med. Jour.

FORMALIN DISINFECTION OF BAGGAGE WITHOUT APPARATUS. PRELIMINARY NOTE ON THE VIABALITY OF THE BACILLUS PESTIS. M. J. Rosenau, Washington, D. C.

NOTES ON THREE UNIQUE AUTOPSIES. Wm. H. Hancker, M.D., Wilmington, Del. Paper. Pp. 18. Wilmington, Del.: Star Print. 1899.

SIXTH INTERNATIONAL OTOLOGICAL CONGRESS, LONDON. Aug 8 to 12, 1899. Transactions Edited under the Direction of the Editorial Committee by E. Cresswell Baber, Hon. Secretary-General. Paper. Pp. 477. London: Southern Publishing Co. 1900.

SOME POINTS IN THE MANAGEMENT OF OBSTETRIC CASES IN PRIVATE PRACTICE. Joseph Brown Cooke, M.D., New York. Reprinted from Medical News.

THE MEDICAL STUDENT OF THE LAST CENTURY. THE VOICE CRYING IN THE WILDERNESS. S. D. Tobey, M.D., Oakland, Ia. Reprints.

TRADE PAMPHLETS.

ILLUSTRATED CATALOGUE OF BATTERIES AND ELECTRO-THERAPEUTICAL APPLIANCES. Paper. Pp. 96. McIntosh Battery and Optical Co., Chicago.

TALKS ON RUBBER. Paper. Pp. 143. Riker's Drug Store, New York.

New Patents.

Patents of Interest to physicians, etc., Sept. 18 to 25:

658,250. Chemical apparatus. Ferdinand R. K. Erfmann. Rotterdam, Netherlands.

658,111. Shoulder-brace. Louise S. Long, San Francisco, Cal.

658,273. Package for medicines, etc. Luther E. Moore, Marietta, Ga.

658,217. Lifting device for hospital beds. Elbert E. Munger, Spencer, Iowa.

658,027. Therapeutic device. Andrew W. Steiger, Boston, Mass.

33,215. Design, water-bag. George S. Van Pelt, New York City.

33,216. Design, fountain syringe-bag. George S. Van Pelt, New York City.

658,481. Massage apparatus. Oscar C. A. Carlsson, Stockholm, Sweden.

658,436. Insufflator. Hans H. Groth, Cincinnati, Ohio.

658,651. Hernial truss. John C. Keil, LaPorte, Ind.

658,669. Speculum. John W. Morrow, Nobility, Texas.

658,467. Device for adjusting truss-pads. Andrew B. C. Sawyer, Albany, N. Y.

658,468. Respiratory mask. Daniel W. Schaeffer, Dayton, Ohio.

658,411. Ionone derivatives and making the same. Johann C. W. F. Tiemann, Berlin, Germany.

658,601. Appliance for imparting heat and electricity to the body. Ignaz Timar, Berlin, Germany.

Change of Address.

Jos. H. And, Cecilian, Ky., to Blackwell, O. T.

H. L. Artz, St. Paul, Minn., to 290 Marshfield Ave., Chicago.

L. D. Alexander, Jr., New Canaan, Conn., to University of Virginia, Charlottesville, Va.

M. P. Bachman, Waterloo, to Muchakinock, Iowa.

P. T. Conlon, Columbus to Platte Center, Neb.

G. F. Chambers, Fort Mitchell, Ala., to Grady Hospital, Atlanta, Ga.

J. C. Dunn, 759 W. 47th St., to 2529 Indiana Ave., Chicago.

H. E. Dearholt, 560 Maryland Ave., to Camp Bldg., Wisconsin and Water Sts., Milwaukee, Wis.

R. C. Fullenwider, Chicago, to Clinton, Ill.

A. M. Fauntleroy, Staunton, to University of Virginia, Charlottesville, Va.

H. D. Gray, Kellogg, to Newton, Iowa.

E. S. Godfrey, Ottawa, O., to 418 S. Broad St., Philadelphia, Pa.

J. H. Holman, Cincinnati, Iowa, to Hartford, Mo.

Geo. L. Hoel, West Liberty, Ill., to Box 823, Ft. Collins, Colo.

E. B. Hults, Gant, to Mexico, Mo.

S. B. Lyon, 8 Mason St., to 330 Eddy St., San Francisco, Cal.

B. F. Long, McCoysville, to Blair's Mills, Pa.

LeRoy Lewis, Chicago, to Bay City, Mich.

J. F. Oechsner, 1229 Elysian Field, to 738 Frenchman St., New Orleans, La.

C. H. McElfresh, Dawson, to 1016 W. Monroe St., Springfield, Ill.

J. Merenna, 1 Charleston St., New York City, to 1465 59th St., Brooklyn, N. Y.

Susanne Orton, Darlington, Wis., to 298 Maxwell St., care Lying-in Dispensary, Chicago.

I. M. Pfouts, Beach City, to Adams Mills, Ohio.

E. R. Steen, Wheatland, Ind., to 216 Sterling Ave., Joliet, Ill.

H. M. Whiteway, 4336 Sansom St., to 1924 Chestnut St., Philadelphia, Pa.

J. Wehrly, Union Trust, to Chemical Bldg., St. Louis, Mo.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Sept. 27 till Oct. 3, 1900, inclusive:

Cosam J. Bartlett, acting asst.-surgeon, from the Department of California to duty at Port Valdez, Alaska.

Edward C. Carter, major and surgeon, U. S. A., member of a board convened at Washington, D. C., to examine officers of the medical department for promotion.

Edward T. Comegys, major and surgeon, U. S. A., will ship to Manila, P. I., all medical supplies at Taku, China, not required by the troops to remain in China and will report at Manila for duty as medical supply officer at that place.

Joseph J. Curry, acting asst.-surgeon, relieved from duty as a member of the board appointed Jan. 16, 1900, to study tropical diseases in Manila, P. I.

Euclid B. Frick, captain and asst.-surgeon, U. S. A., from Ft. Wadsworth, N. Y., to San Juan, P. R., for duty in the Department of Porto Rica.

Guy C. M. Godfrey, captain and asst.-surgeon, U. S. A., to San Francisco, Cal., to accompany troops to Manila, P. I., and for duty in the Division of the Philippines.

Albert Hartsuff, colonel and assistant surgeon-general, U. S. A., leave of absence granted, with permission to go beyond sea.

John Van R. Hoff, major and surgeon, U. S. A., relieved from further duty with troops in China, to proceed to San Francisco, Cal., and report by telegraph to the surgeon-general at Washington, D. C.

Jefferson R. Kean, major and surgeon, U. S. A., member of a board convened at Columbia Barracks, Quemados, Cuba, to examine officers of the medical department for promotion.

Preston S. Kellogg, acting asst.-surgeon, from Battle Creek, Mich., to Fort Keogh, Mont., for post duty.

Thomas J. Kirkpatrick, lieutenant and asst.-surgeon, U. S. A., to report at Washington, D. C., for examination for promotion.

Muhlenberg K. Knauff, acting asst.-surgeon, from Fort Keogh, Mont., to St. Paul, Minn., for annulment of contract.

Edgar A. Mearns, captain and asst.-surgeon, U. S. A., to report at Washington, D. C., for examination for promotion.

James C. Merrill, major and surgeon, U. S. A., member of a board at Washington, D. C., to examine officers of the medical department for promotion.

Henry Page, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

Walter Reed, major and surgeon, U. S. A., president of a board convened at Columbia Barracks, Quemados, Cuba, to examine officers of the medical department for promotion.

Alexander N. Stark, captain and asst.-surgeon, U. S. A., leave of absence extended; member of a board at Columbia Barracks, Cuba, to examine officers of the medical department for promotion.

W. J. S. Stewart, acting asst.-surgeon, now on leave of absence, to temporary duty on the transport *Rawlins*.

John H. Stone, lieutenant and asst.-surgeon, U. S. A., to report at Columbia Barracks, Quemados, Cuba, for examination for promotion.

Neil C. Trew, acting asst.-surgeon, from Port Valdez, Alaska, to San Francisco, Cal., for duty in the Department of California.

George M. Wells, captain and asst.-surgeon, U. S. A., from San Juan, Porto Rico, to duty at Fort Wadsworth, N. Y.

Alfred A. Woodhull, lieutenant-colonel, deputy surgeon-general, U. S. A., president of a board convened at Washington, D. C., to examine officers of the medical department for promotion.

Navy Changes.

Changes in the Medical Corps of the U. S. Navy for the week ending Oct. 6, 1900:

Surgeon J. C. Byrnes, detached from the *Massachusetts*, Oct. 1, and ordered to the New York navy yard.

Medical Inspector J. R. Waggener, detached from duty at naval hospital, Yokohama, Japan, and ordered to duty in charge of the naval hospital, Cavite, P. I.

Asst.-Surgeon B. L. Wright, detached from the *Isla de Luzon* and ordered to the naval hospital, Cavite, P. I.

P. A. Surgeon L. L. Von Wedekind, detached from the *Richmond* and ordered to the Puget Sound naval station.

P. A. Surgeon R. S. Blakemen, detached from the naval training station, Newport, R. I., and ordered to temporary dury on the *Pensacola*.

P. A. Surgeon J. F. Leys, ordered to the naval hospital, Newport, R. I., for duty.

P. A. Surgeon J. M. Moore, detached from the naval recruiting rendezvous, Chicago, Ill., Oct. 8, and ordered home and to wait orders.

Asst.-Surgeon C. R. Burr, detached from the Puget Sound Naval

Station and ordered to proceed home and to be ready for orders to sea duty.

P. A. Surgeon W. F. Arnold, ordered to the naval recruiting rendezvous, Chicago, Ill., Oct. 8.

Surgeon S. H. Dickson, detached from the Washington navy yard and ordered to duty at the headquarters of the Marine Corps, Washington, D. C.

Surgeon C. G. Herndon, detached from the naval museum of hygiene, Washington, D. C., October 8, and ordered to duty at the Washington navy yard.

Surgeon E. H. Green, detached from duty at the headquarters of the Marine Corps, Washington, D. C., and ordered to wait orders.

Surgeon E. H. Green, ordered to the *Alabama*, Oct. 16.

Asst.-Surgeon T. M. Lippitt, detached from the *Monocacy* and ordered to the naval hospital, Yokohama, Japan, for treatment.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ending Sept. 27, 1900:

Surgeon F. W. Mead, granted leave of absence for one day.

Surgeon D. A. Carmichael, granted leave of absence for thirty days from Oct. 15.

P. A. Surgeon C. P. Wertenbaker, granted leave of absence for three days.

Asst.-Surgeon M. H. Foster, to proceed to Port Angeles, Washington, for special temporary duty.

Asst.-Surgeon Dunlop Moore, relieved from duty at Dutch Harbor, Alaska, and directed to proceed to San Francisco, Cal., or Seattle, Wash., and await orders.

Asst.-Surgeon Carroll Fox, relieved from duty at Dutch Harbor, Alaska, and directed to proceed to San Francisco, Cal., or Seattle, Wash., and await orders.

A. A. Surgeon R. S. Primrose, granted leave of absence for seven days from Sept. 24.

A. A. Surgeon W. S. Walkley, granted leave of absence for eleven days from Sept. 24.

A. A. Surgeon W. O. Wetmore, relieved from duty at Cape Charles quarantine, and directed to proceed to Buffalo, N. Y., and report to medical officer in command for duty.

Hospital Steward G. C. Allen, granted leave of absence for five days under paragraph 181, Regulations, M.-H. S.

Hospital Steward Myron R. Mason, relieved from duty at Dutch Harbor, Alaska, and directed to proceed to San Francisco, Cal., or Seattle, Wash., and await orders.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague, have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Oct. 6, 1900:

SMALLPOX—UNITED STATES.

Colorado: Sept. 18-24—Garfield County, 1 case; Larimer County, reported; Las Animas County, 2 cases; Pueblo County, 11 cases; total, 14 cases, 1 death.

Kansas: Wichita, Sept. 22-29, 1 case.

Louisiana: New Orleans, Sept. 22-29, 1 case, 1 death.

Ohio: Cleveland, Sept. 22-29, 6 cases.

Oregon: Portland, Sept. 5, 3 cases.

Utah: Salt Lake City, Sept. 22-29, 3 cases.

Washington: Tamcoa, Sept. 22-29, 1 case.

SMALLPOX—FOREIGN AND INSULAR.

Belgium: Ghent, Sept. 1-15, 2 deaths.

Egypt: Cairo, Aug. 26-Sept. 2, 2 deaths.

England: Liverpool, Sept. 8-15, 1 case, 1 death; London, Sept. 1-15, 6 cases.

France: Paris, Sept. 8-15, 12 deaths.

India: Calcutta, Aug. 25-Sept. 1, 5 deaths; Karachi, Aug. 26-Sept. 2, 2 cases, 1 death; Madras, Aug. 20-31, 3 deaths.

Japan: Formosa, July 1-31, 3 cases.

Mexico: City of Mexico, Sept. 2-16, 13 cases, 7 deaths.

Philippines: Guimeras, Aug. 20, 20 cases.

Russia: Moscow, Sept. 2-9, 2 cases; Odessa, Sept. 8-15, 6 cases, 3 deaths; St. Petersburg, Sept. 1-8, 22 cases, 12 deaths; Vladivostock, May 1-July 31, 3 cases; Warsaw, Sept. 1-8, 9 deaths.

Scotland: Glasgow, Sept. 8-22, 26 cases, 1 death.

YELLOW FEVER.

Colombia: Barranquilla, Sept. 8-16, 1 death; Cartagena, Aug. 31-Sept. 14, 3 cases, 3 deaths.

Cuba: Havana, Sept. 15-22, 9 deaths.

CHOLERA.

India: Bombay, Aug. 28-Sept. 4, 177 deaths; Calcutta, Aug. 25-Sept. 1, 4 deaths; Karachi, Aug. 26-Sept. 2, 11 cases, 10 deaths; Madras, Aug. 25-31, 44 deaths.

Japan: Fukuoka Ken, Aug. 28, 4 cases; Osaka and Hiogo, Aug. 18-25, 1 case.

Straits Settlements: Singapore, July 28-Aug. 4, 1 death.

PLAGUE—FOREIGN AND INSULAR.

Brazil: Rio de Janeiro, Aug. 1-31, 90 cases, 46 deaths.

Egypt: Alexandria, Aug. 20-27, 2 cases, 2 deaths.

India: Bombay, Aug. 28-Sept. 4, 57 deaths; Calcutta, Aug. 25-Sept. 1, 56 deaths.

Japan: Formosa, Taihoku Ken, July 31-Aug. 7, 3 cases, 4 deaths.

Philippines: Cebu, July 25, 1 American boy; Manila, July 28-Aug. 18, 10 cases, 5 deaths.

Scotland: Glasgow, Sept. 18, 7 cases, 1 death.

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